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VOL. 19 NO. 9 **SEPTEMBER 1958**

RETAIL SELLING 535

Future opportunities and modern trends in retail pharmacy are described by Harold W. Pratt, Chairman, APhA Section on Pharmaceutical Economics

OPHTHALMIC SOLUTIONS 537

The second installment in a three-part series on the preparation of ophthalmic solutions by Sidney Riegelman, Ph.D., and Daniel G. Vaughn, Jr., M.D.

MANPOWER 541

Studies on supply of pharmacists indicate a threefold increase in the pharmaceutical shortage has occurred in one year alone

LEASES 542

Paul C. Olsen, Ph.D., describes the various types of leases commonly used in pharmacies

ASPIRIN SUSPENSION 546

A formula for a stable aspirin suspension has been prepared by Gerhard Levy, Pharm.D., and Roderick D. Jones, Pharm.D.

ONE TEASPOONFUL 548

The official equivalent of one teaspoonful should be 5 ml. according to arguments presented by Edward Stempel, Ed.D.

CURRENT COMMENT 528

Segregated Blood, Misuse of Asthma Preparations, Cancer Research Contracts, Fifth Column Weapons, Care of Burns, Womanly Interests, Live Polio Vaccine (528)—Green Shield Plan? (545)—Congressional Accomplishment, U.S. Hospital Statistics (547)—National Day of Prayer (549)—Communicable Diseases Summary (555)—New Secretary of Wisconsin State Board, Coming Events (526)

DEPARTMENTS

APhA MEMBERS	526	HOSPITAL PHARMACY	550
APOTHECARY	554	NEW & NONOFFICIAL DRUGS	560
BOOK NOTICES	556	NEW PRESCRIPTION PRODUCTS	563
ECONOMICS	552	PROGRESS IN MEDICINE	558
FEDERAL & STATE ACTIONS	555	Rx INFORMATION SERVICE	557
		INDEXES 567	

NEWS

LAST MINUTE NEWS	518	WASHINGTON VIEWS	517
NEWS AND NOTES	520	EDITORIAL	530
BRANCH NEWS	525	LETTERS	529
APhA WOMEN'S AUXILIARY	534	STRAIGHT FROM HEADQUARTERS	532

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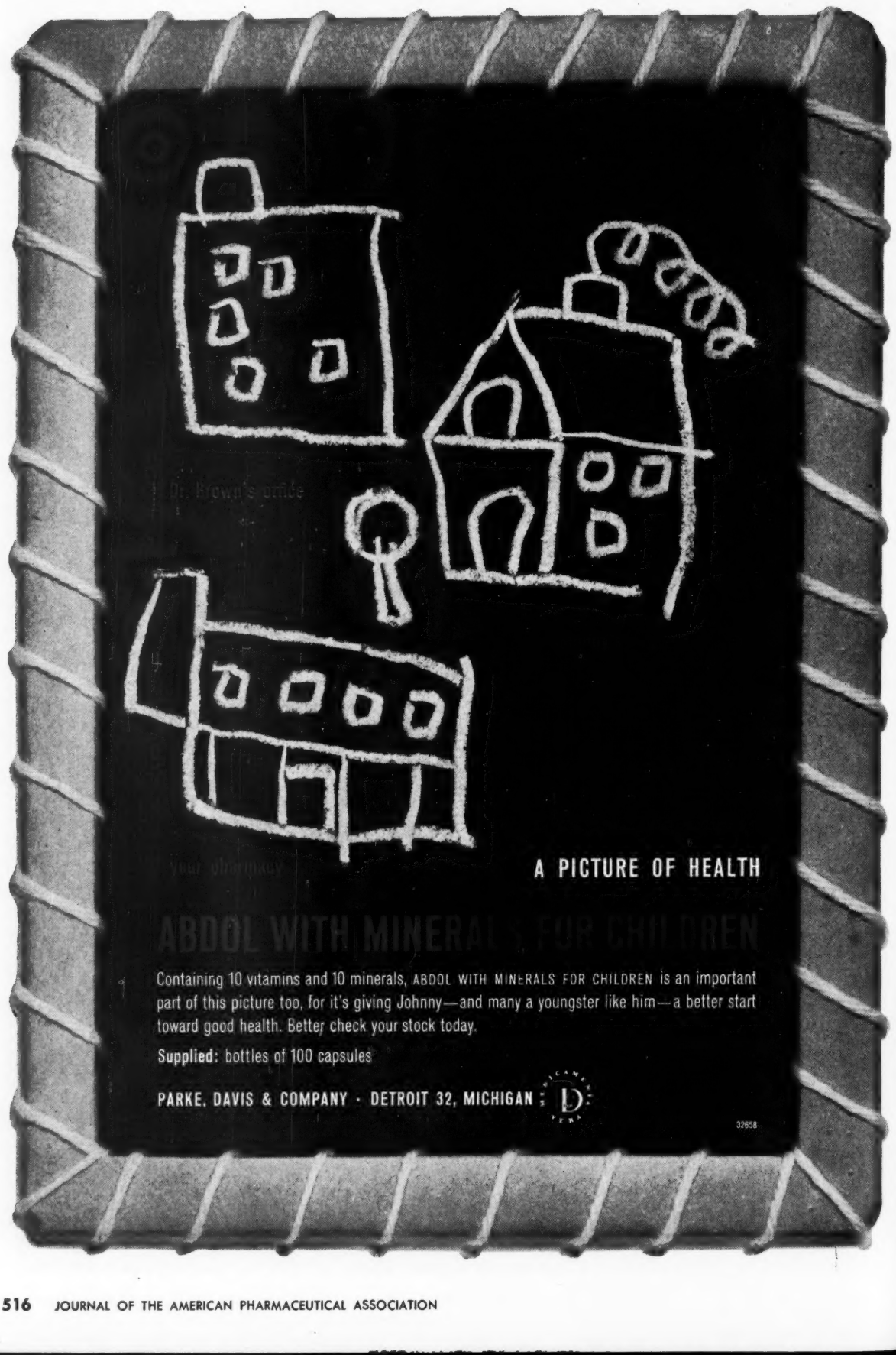
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Washington Views

Surgeon General Leroy E. Burney of the Public Health Service has sent out new warnings to the 40,000,000 Americans under 40 years of age, including half of the 20,000,000 preschool children in this country who have not been protected against paralytic poliomyelitis. Pharmacists should repeatedly urge that unvaccinated persons between 2 months and 40 years of age receive three inoculations with Salk vaccine.

Soaring birth rates and decreasing usable farm land, while industrial buildings, highways, and urban developments spread over arable land, are creating renewed interest in the possibility of preventing serious nutritional shortages by growing microorganisms such as yeasts which can produce food at a rate 15 to 100,000 times greater than domestic animals or farm crops.

The taxpayers in the U.S. are being saved millions of dollars annually as the new drugs discovered and developed by Pharmacy lower the costs of medical care in the Veterans Administration and other public health facilities.

According to Secretary of Labor James P. Mitchell, all young people should have the benefit of authoritative job information, professional counseling, testing, and custom-made placement. The changing nature of our work force, the greater premium placed on creative manpower, and the diminishing demand for unskilled workers makes it vitally important that young people select jobs that will be in demand in the years ahead. It is likely by 1965 that over 11% of our labor force will be professional and technical workers, 33% skilled and semiskilled workers, and only 5% unskilled.

As the cost of medical care increases steadily, people must learn to budget for good health just as they do for food, clothing, and shelter. The only difference will be that good health will be budgeted through payments for voluntary health insurance plans.

The world posture of the U.S. has been immeasurably improved by its attempts to convert the East-West struggle into one of an all-out competition to make the greatest contribution to world health.

Although the average home discourages girls from scientific or engineering courses and friends often discourage girls from taking high school science courses, lack of exposure to "rule of thumb" physical principles enables women students to comprehend more readily the theoretical concepts of the physical universe. Science is no longer a man's world.

Indicators for a bright future for Pharmacy include the public's growing preoccupation with the prevention of disease, the annual introduction of more effective drugs, the increasing frequency of medical check-ups, the return of the general practitioners of medicine, the great growth of voluntary health insurance, and the trend toward home treatment by local physicians.

Last Minute News

A boon in rodent sales is skyrocketing. All test animals, including dogs, monkeys, hamsters, rabbits, guinea pigs, rats, and mice, are being used in increasing numbers in research programs from missile development to cancer chemotherapy. Laboratories in drug companies and other institutions use 20,000,000 mice a year. Monkeys are now used at the rate of 200,000 per year.

Tests now being conducted on new anticancer chemicals such as Eli Lilly's diepoxypiperazine derivatives are promising.

Traces of penicillin in some polio vaccines cause allergic reactions in people who are sensitive to the antibiotic. Penicillinase may be given before the vaccine injection, but tests for sensitivity to monkey protein, horse serum, formaldehyde, preservatives, and other antibiotics should be made when there are side reactions, cautions Dr. Murray C. Zimmerman of the University of Southern California School of Medicine.

The cholera epidemic sweeping through India, Cambodia, East Pakistan, Burma, Nepal, and Thailand has produced nearly 50,000 cases and well over 20,000 deaths this year.

Use of X-ray diagnosis entails only a minute hazard, says Dr. J. G. Stapleton of Hamilton, Ontario. The physician should proceed on the basis of a conviction that the benefit exceeds the genetic costs involved, according to opinions from leading scientists polled in a Science Service survey.

Nearly 1,000 scientists from more than 25 nations, attending the First International Congress on Radiation Research at the University of Vermont, were warned that for every roentgen of radiation received over the whole body for short periods of time a human being loses about 12 days of life. Some fluoroscopes may radiate the body with several roentgens during the course of a single examination.

Denver leads in the amount of radioactive strontium-90 fallout received from nuclear weapons tests in North America with San Juan next, followed by New York, Houston, Vancouver, and Boston. The bones of 33 cadavers in Denver contained 33 parts per million of Sr-90.

The radioactive carbon content in the shells and flesh of shellfish has increased more than 4% between November 1953 and June 1957, because of production of C-14 by atomic bombs, according to Dr. H. de Vries of Natuurkundig Laboratorium, Groningen, Netherlands.

A chemical deficiency of the nervous system, i.e., less neuraminic acid, may result in adult schizophrenics, says Dr. Samuel Bogoch of the Department of Psychiatry, Harvard Medical School.

The Veterans Administration reports that about 600,000 veterans are expected to be in training this fall.

The American Heart Association has just announced that it will spend $8,000,000, the largest sum ever spent for cardiovascular research, during the coming fiscal year.

Cases of rabies among cattle totaled 654 in the United States during 1957, in addition to 25 cases among sheep and goats, 24 cases among horses, 1,068 among foxes, and 775 among skunks. Only 1,908 cases were reported in dogs, an encouraging reduction from the 1,989 cases reported the preceding year.

A record elementary and high school enrollment of 37,461,000 this fall, an increase of nearly 1,500,000 over last year, will create a total back-to-school expenditure of over $2,000,000,000 at an average of $55 per student. The college student market will account for a further $1,000,000,000 at about $200 per student, says the *Variety Store Merchandiser.*

The U.S. Department of Commerce is now supplying American science and industry on a subscription basis through the Foreign Technical Information Center with abstracts of all articles appearing in 141 Soviet technical Journals.

The average number of persons per nonwhite household in 1957 in the United States was 3.85. For white households the average was 3.29.

Nearly 100,000 medicine chests ordered by the Chinese Government for sale to Chinese peasants at $7.00 each are being bought empty by factory workers for storing tools and by housewives for storing sewing implements because the peasants cannot afford to buy them.

The Soviet Union has offered $20,000,000 (80,000,000 rubles) as a loan to India to help develop an Indian pharmaceutical industry.

The National Wholesale Druggists' Association reports that last year's drug wholesalers' earnings, after taxes, were the highest since 1948, and it is the second time since 1950 that they have exceeded 2% of sales.

Retail drug stores have been substantially reducing their inventories in spite of the fact that the retail drug business is for the most part as good as it was in 1957 and this is causing a "shocking" percentage of out-of-stock items, according to Emanuel Katz, vice president for marketing of Ketchum & Co. Inc.

Supermarket and gas station management, by hiring pharmacists and establishing pharmacies as part of their operations, are expanding into the drug field on a legal and professional basis.

New Jersey has decreed a 5% drop in Blue Shield doctor service rates, with compliance expected beginning Oct. 1.

A new continuous production process for manufacturing penicillin and other antibiotics has just been reported by Dr. Philipp Gerhardt, associate professor of bacteriology, and research assistant Morton C. Bartlett from the University of Michigan Medical Center.

Beginning early in 1959 the General Services Administration will begin selling 13,860,000 ounces of quinine now held in the National stockpile, under provisions of the Strategic and Critical Materials Stockpiling Act.

Selective Service System has been requested by the Department of Defense to provide Armed Forces Induction Stations with 11,000 men during October, 1958 for assignment to the Army.

Over 100 scientists of international standing from many countries will support and supervise the affairs of the Pergamon Institute, a nonprofit foundation, recently formed in Washington, D.C., for the purpose of making available to English-speaking scientists, doctors, and engineers the results of scientific, technological, and medical research and development in the Soviet Union.

When tested, 540 chests of Japanese tea having "slight radioactivity," when unloaded at New York, were found to have 1/10 the established recommended tolerance for Sr-90 and have been released.

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News and Notes

Associations

American Medical Association—The AMA Committee on Toxicology met in Chicago on July 25 with about 100 representatives from interested groups. Representing the APhA was *Dr. William S. Apple,* Assistant Secretary of the ASSOCIATION.

Model bills to regulate toxic chemicals were under consideration. The AMA Model Uniform Hazardous Substances Act was opposed by the Chemical Specialties Manufacturers Association because of the following:

1. Industrial chemicals are included in the bill rather than just household chemicals.
2. The definition of toxic substances is too broad.
3. A class of materials called strong sensitizers would fall under the proposed regulations.
4. A poison label on highly toxic substances is not required.

The CSMA has drawn up a Model Hazardous Substances Labeling Act, which is more rigid in some respects but would be directed only toward household products. Industry feels, as a spokesman for the Manufacturing Chemists' Association put it:

> We do not believe that commercial and household products can be satisfactorily covered by a single bill, because of the differences in methods of sale and use.

American Red Cross President, *General Alfred M. Gruenther,* received the Gold Medal of the Austrian Red Cross in appreciation for American Red Cross assistance during the Hungarian relief program in 1956–57. The award was presented by *Dr. Wilfreid Platzer,* Austrian Ambassador to the U.S. in a ceremony in Washington on August 12.

American Society of Hospital Pharmacists has compiled and published *The American Hospital Formulary Service* which is being made available this month. The Service will provide drug monographs in loose-leaf form together with supplementary monographs to be issued at regular intervals. Drug monographs are being prepared by *Dr. William M. Heller,* Chief Pharmacist of the University of Arkansas Medical Center, who, as Chairman of the ASHP Committee on Pharmacy and Pharmaceuticals, is in charge of the project. He is being assisted by *Dr. Marc Jordin,* Head of the Department of Pharmacology of the University of Arkansas School of Pharmacy. For further information contact *Mrs. Gloria Francke,* ASHP Executive Secretary, 1020 Ferdon, Ann Arbor, Mich.

American Public Health Association will hold its 86th annual meeting in St. Louis, October 27–31, with an anticipated attendance of more than 4,000 health authorities from all parts of the world. A panel discussion and reports during the morning session on October 29 will consider topics concerned with coping with ionizing radiation and atmospheric pollution.

Iowa Pharmaceutical Association is collecting data for a "Who's Who in Pharmacy in Iowa," to be run in *The Iowa Pharmacist:* by name (alphabetically), by Districts, or by length of tenure. No publishing policy has been established to date, but information is being gathered by questionnaire from state retailers first, after which other categories of pharmacists will be canvassed. The project is being undertaken with the hope of bringing state pharmacists together and enabling the Association to render them further service.

Medical Service Society of America—New officers include *Ralph A. Ranghelli,* Ayerst medical detailman, President; *Myron Mountz* of Stuart Company, Vice President; *Seymoure S. Fahrer* of Schering, Secretary-Treasurer; *Charles E. Buell* of Eaton, President-Elect; and *K. G. Szone* of Fougera, Delegate-at-Large. Mr. Ranghelli and Mr. Fahrer are APhA members. The elections occurred at the 12th national convention of the MSSA held recently in Detroit.

MRS. SHIRLEY ROWLAND CHAPURA (l) is shown receiving one of the seven awards presented to her upon her graduation from the Temple University School of Pharmacy. Dean Joseph B. Sprowls (r) makes the presentation as Joseph A. Marlino (c), President of the Pharmacy Alumni Association looks on.

Detailmen interested in joining MSSA, which is the national association of professional detailmen, are invited to send inquiries to the national offices, 729 North Brauer, Oklahoma City 6, Okla.

World Medical Association held its 12th General Assembly on August 15–20 in Copenhagen, Denmark. *Dr. John Henderson,* Medical Director of Johnson & Johnson, keynoted the meeting with a speech on "The Health Team and the Challenge of World Unity." Medical doctors from 53 nations of the free world attended the Assembly which was under the patronage of *Frederick IX,* King of Denmark.

Colleges

Ferris Institute was host to the 35th Plant Science Seminar, August 18–22. Featured were lecture-demonstrations, research reports and panel discussions, in addition to which trips were offered to plants of the Dow Chemical Company, Gerber Products Company, and the H. J. Heinz Company. The Seminar was under the chairmanship of *Dr. Arthur E. Schwarting* of the University of Connecticut. The local committee which planned the conference includes *Dr. Karlis K. Kazerovskis,* Chairman; *Dr. Norris W. Dunham;* and *Dr. James A. Freck. Dean Edward P. Claus,* local Secretary, helped the Committee arrange the program.

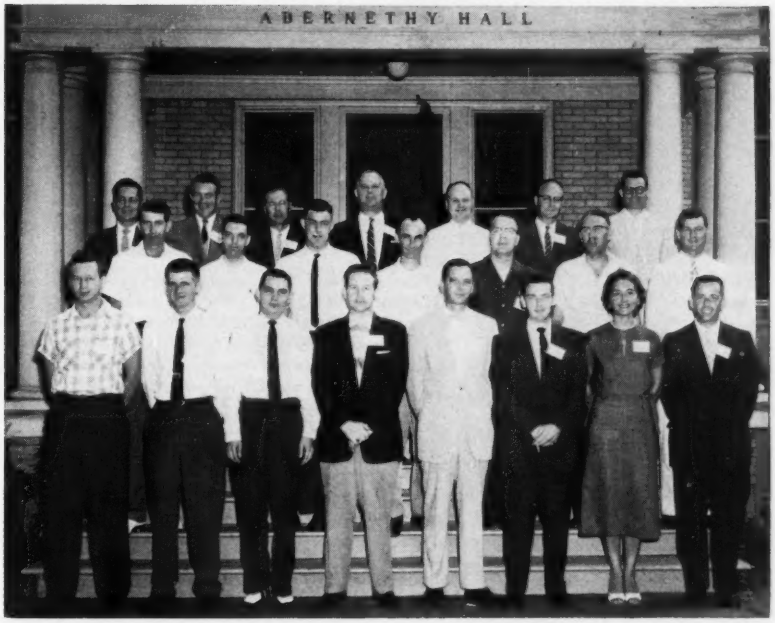
Loyola University—*Dr. Edward J. Ireland* has been appointed Dean of the College of Pharmacy, to succeed the late *Dean John F. McCloskey* who died last December. Professor of Pharmacognosy and Pharmacology at Loyola since 1939, Dr. Ireland has served as Acting Dean since December. A native of Colorado and recipient of A.B., B.S., M.S. and Ph.D. degrees from the University of Wisconsin, he was instructor of Pharmacognosy and Pharmacology at the University of Florida before coming to Loyola. From 1950 to 1952 he served as toxicologist for the City of New Orleans Coroner's Office. A co-founder of the Louis J. Dufilhe Historical Pharmacy Museum in New Orleans, Dr. Ireland has been Chairman of the Historical Pharmacy Commission of New Orleans since 1950. A life member of APhA, Dr. Ireland also holds membership in the Louisiana State Pharmaceutical Associa-

tion, AACP, and ASHP, and he was national President of Rho Chi in 1944–46.

A check for student scholarship aid was presented to Loyola College of Pharmacy by the Westside Druggists' Association of New Orleans. The donation will be added to the Dean John F. McCloskey Scholarship Fund, for which the Westside Association intends to hold an annual fund-raising dinner.

Massachusetts College of Pharmacy—New appointments to the faculty for the 1958–59 session include *Dr. Winthrop E. Lange* as Assistant Professor of Pharmacy, *Dr. Richard E. Faust* as Professional Lecturer in Pharmacy, *Abraham J. Haddad* as Assistant in Pharmacy, and *Robert H. Zaim* as Assistant in Chemistry. Changes in title for the coming session include *Dr. Charles W. Bauer*, Chairman of the Department of Chemistry and now Director of Research, Professor *Mitchell J. Stoklosa* now Chairman of the Department of Pharmacy, *Douglas H. Kay*, Instructor in Chemistry, and *Edward F. LaSala*, Instructor in Chemistry.

University of Illinois—The Atomic Energy Commission has granted $9,000 to the College of Pharmacy for training students of pharmacy in the handling of radioisotopes. Pharmacy Dean, *Dr. George L. Webster*, said the funds will be used to buy equipment for an educational and training program designed to enable students to dispense and assay radioactive materials, understand the health problems involved in handling and disposing of such material, and to foster interest in graduate research in this field.



UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY held a pharmacy management conference on July 14–15. Pharmacists attending included, front row, l to r: William C. Griffin, Roanoke Rapids; John W. Andrews, Winston-Salem; Charles D. Blanton, Jr., Kings Mountain; Wilson Griffin, Kings Mountain; Charles M. Barnett, Henderson; William H. Wilson, Raleigh; Mrs. Jean Provo, Raleigh; and Carl T. Bauguess, Jr., Chapel Hill; second row, l to r: Marcus Cameron, Greensboro; W. P. Rose, Greensboro; William R. Adams, Wilson; Herman S. Barbery, Goldsboro; Colvin Floyd, Roanoke Rapids; C. Louis Shields, Jacksonville; and Edward M. Smith, Chapel Hill; third row, l to r: H. C. Reaves, Asheboro; J. W. Tyson, Greensboro; R. N. Watson, Sanford; Harry W. Walker, Norlina; Jesse M. Pike, Concord; W. J. Smith, N. C. Pharmaceutical Association Secretary, Chapel Hill; and Harold Q. Langenderfer, Chapel Hill. All are from North Carolina.

Industry

Abbott Laboratories—*Dr. Ernest H. Volwiler*, Chairman of the Board of Directors, has been cited by Indiana Technical College as one of 100 Midwesterners who have made outstanding contributions to science, engineering, and industry. The citation was made in conjunction with the college's dedication of its new Dana Science Building on the campus in Fort Wayne, Ind. Those receiving the honor were selected from among 600 nominees living in or concerned with the states of Illinois, Indiana, Kentucky, Michigan, and Ohio.

Bard Pharmaceuticals—*Irving A. Schlakman* has been named Assistant to Bard President, *Dr. Robert H. Broh-Kahn*. A graduate of Brooklyn College of Pharmacy, Mr. Schlakman holds a Master's degree from New York University. He was previously associated with Purdue Frederick Company; Stein, Hall and Company; and Schieffelin and Company. A member of APhA, Mr. Schlakman also belongs to the American Chemical Society and numerous other scientific organizations.

Crookes-Barnes Laboratories has joined with the Emery Air Freight Corporation to develop a distribution method for delivery of rare and rarely-used drugs within a few hours to any place where they may be required on short notice. The plan, which operates around the clock, was devised to provide for speedy shipments of Glutavene, a drug used to relieve hepatic coma. Under the plan a telephone call to Crookes-Barnes ensures swift delivery by Emery of the necessary quantities of the drug.

Dodge & Olcott is celebrating its 160th anniversary. Established in 1798, it is the oldest company in America specializing in the manufacture and merchandising of essential oils, aromatic chemicals, and like products.

Eli Lilly and Company—*Joseph E. Marmon* has been named Executive Director of Production. A graduate in Pharmacy from Ohio Northern University, Mr. Marmon joined Lilly in 1939. He will be succeeded in his previous position as President of Corn States Laboratories, a Lilly subsidiary producing veterinary products, by his

Continued on page 522

News and Notes Continued from page 521

SCHETTLER DRUG COMPANY of Detroit receives a gold-decorated prescription bottle from Owens-Illinois Glass Company on the occasion of the firm's filling its five-millionth prescription. O-I Prescription Ware Sales Manager, J. J. Geagan (l), presents the award to Walter Mech, Manager of the Schettler Company's new store at Oak Park, Michigan. Observing the ceremony are Frank Kolufsky, Assistant Manager, and E. R. McConnell (r), Director of the Schettler Prescription Department.

former Assistant, *Edward Buesking*.

John O. MacFarlane has been chosen for the newly created post of Assistant Director of Biological Development.

McKesson & Robbins will implement its expansion plans by building a new drug division in Canton, Ohio. *H. J. Bolton*, Central District Vice President, will be responsible for the new division.

New York Quinine & Chemical Works—*Barclay E. Mackinnon*, First Vice President, was honored at a surprise dinner at the Chemists Club in New York on August 4, celebrating his 25th year with the company. Mr. Mackinnon has held his present position since August 1956.

Parke, Davis—Recent appointments include *Gertrude Losie* to the position of Head of Research Libraries, and *Dr. Edward F. Elslager* to Laboratory Director in Organic Chemistry. A graduate of Cornell, Miss Losie also attended the Columbia College of Pharmacy. Before joining Parke, Davis last October, she served as Head Librarian for the Wallerstein Company for more than 12 years. Dr. Elslager, who joined the firm in 1951, holds his Ph.D. from the University of Illinois.

A. H. Robins Company recently acquired Whittier Laboratories, Chicago drug manufacturer, as a wholly-owned subsidiary. Robins and Whittier offices and facilities will be housed at 2029–45 Dempster Street, Evanston, Ill. This third major branch of Robins' U.S. operations is designed to service the Midwest area. Other branches are located in Dallas and Los Angeles, while the parent company is established in Richmond, Va.

Roche Laboratories—*George N. Wagner* has been appointed Assistant General Sales Manager. A Regional Sales Manager since 1957, Mr. Wagner joined the company as a salesman in 1942. He is a member of APhA and belongs to the Southern California Pharmaceutical Association.

Schering Corporation Vice President, *Dr. John N. McDonnell*, has been selected as one of 8 delegates to represent the U.S. at the Federation Internationale Pharmaceutique in Brussels, Belgium, from September 8 to 15. He will be the official representative of the APhA at the meeting.

The firm was written up in the August issue of *Fortune* Magazine in an article entitled "Schering's Structural Roulette."

G. D. Searle & Company—President *John G. Searle* will provide the money for a new health center for students of Northwestern University. To be started early in 1959 on the University's Evanston campus, the project will be known as Searle Health Center. Mr. Searle, a graduate of the University of Michigan, is a trustee of Northwestern. Active in the pharmaceutical industry, he is also co-founder and first Board Chairman of Health Information Foundation.

Smith Kline & French Veterinary Medical Director, *Dr. Samuel F. Scheidy*, was named President-Elect of the American Veterinary Medical Association at its 95th annual convention in Philadelphia in August.

Sterling Drug's National Brands Division has been re-named Glenbrook Laboratories. *J. N. Cooke*, National Brands President, announced the change of name at the opening session of a 2-day meeting of the company's national sales organization. Glenbrook, Conn., is the site of the plant first opened in 1856 by *Charles H. Phillips*, whose name became identified with Phillips' Milk of Magnesia, which is one of the products marketed by National Brands.

Upjohn Company has established 2 French companies which are expected to develop the marketing of Upjohn pharmaceutical products in the French Union. One company, Union Chimique Atlantique, S.A., will manufacture pharmaceuticals and pharmaceutical chemicals which will be distributed by the second firm, Laboratoires Upjohn S.A.R.L., soon to be organized. President and General Manager of the new companies will be *Jean Bengue*. Exchanges of technical information and scientific personnel are already under way, and it is believed that Laboratoires Upjohn will market its first products late this year.

Wallerstein Company—*Edward Rollhaus* has been named Chairman of the Company's Commercial Development Group. Other members of the group are *Dr. Kenneth Howard* and *James Boyd*. This committee's purpose is to find additional markets for Wallerstein products and new methods of utilizing the extensive library of enzymes which the Company has created over the past 40 years, as well as to encourage the flow of ideas and inquiries from outside sources that will help the Company to develop new products and services.

Warner-Chilcott—*Gerald M. Slade* has been appointed Manager of Trade Relations, a newly established post. Mr. Slade was previously Sales Manager of Harrower Laboratories, which merged with Warner-Chilcott in 1955. Since that time he has been engaged in special sales assignments for the firm.

Warner-Lambert Board Chairman, *Elmer H. Bobst*, received an honorary degree of Doctor of Laws from Rider College, Trenton, N.J., at the June Commencement Exercises.

International

Australia—On August 11, *Mr. Gordon Larkin*, from Sidney, Australia, visited APhA Headquarters and discussed mutual problems with the staff members.

Mexico—Syntex, S.A. of Mexico City has been awarded the first contract to a chemical firm outside the U.S. by the National Institutes of Health, it was announced by *Dr. Carl Djerassi*, Vice President in charge of Research. The purpose of the contract is to find a chemical steroid agent which possibly will be effective in treating breast cancer. Syntex is now making quantities of certain rare steroid not generally available, which will be prepared for inclusion in a breast cancer screening program being conducted by the National Cancer Service Center of the National Institutes of Health.

Philippines—*Dr. Filemon Tanchoco*, Executive Vice President, Manila Central University, visited APhA Headquarters on August 8. He discussed professional and educational problems with members of the staff.

Retailing

Adams Drug Company, Forney, Texas, on August 8 celebrated its 65th anniversary under the ownership and management of *Walter D. Adams*. Mr. Adams bought half interest in his brother Frank's drug store in 1883, after selling his newspaper, *The Forney Tribune*, and in 1884 he took over sole ownership of the business. Our congratulations to Mr. Adams, who was APhA President in 1931–32.

Jones Brothers Drug Company, Gulfport, Miss., filled its one-millionth original, regular prescription recently. The firm has been in operation for 53 years, and its President is APhA Life Member, *H. H. Jones*. A full page advertisement run in the Biloxi, Gulfport *Daily Herald* on July 21 announces the Jones Brothers' milestone with good taste and propriety. The best wishes of the ASSOCIATION are extended to the firm, its owners, and employees.

Pharmacopedia—The Skyline Publishers of Portland, Ore., has been formed by *William C. Felter*, former Editor and Publisher of *Pacific Drug Review*, who sold his interest in that periodical in July to create *Pharmacopedia*. The purpose of this service, which will begin October 1, is to provide retail and hospital pharmacists with complete up-to-date, reliable, and easy-to-use information on new prescription products.

THAILAND ARMY COMMANDER-IN-CHIEF, Field Marshall Sarit (l), and Thai Ambassador Khoman (c) hand over cholera vaccine to Major General William S. Stone (r), Commander, Atlantic Division, MATS. Five tons of serum and medical supplies were recently flown by MATS aircraft to Bangkok to fight a cholera epidemic which was spreading through Thailand.

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New Stock No.	Former Stock No.	Size	Box of 6
4126	3687	1" x 36"	$1.42
4146	3667	3" x 18"	1.64
4156	3657	3" x 36"	2.21
4166	3677	6" x 36"	3.64
4116	3697	½" x 72" (Selvage-Edged Packing)	2.94

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urine-sugar analysis set

To diabetics and their physicians and pharmacists, CLINITEST means rapid *and* reliable urine-sugar testing—standardized for accurate results every time. And now, the new streamlined model (No. 2105) gives your diabetics this standard test in the best looking, most efficient form ever designed. Check the sales points that will help you sell:

• new low price • handsome, two-tone neutral gray case • full-view test tube slot for watching test • refillable with either Sealed-in-Foil or bottle of 36 CLINITEST Tablets

DISPLAY THE NEW MODEL CLINITEST SET

Every time you sell a CLINITEST set you gain a customer who will keep coming back for 24- or 36-tablet refills. This means repeated opportunities for suggestive selling and for impulse buying.

Model No. 2105 CLINITEST Urine-Sugar Analysis Set contains bottle of 36 CLINITEST Reagent Tablets, Test Tube, Dropper, Color Scale with Instructions, Analysis Record. Price to you $1.20. Suggested selling price $2.00.

Full 40% on all AMES products

SPECIAL INTRODUCTORY OFFER

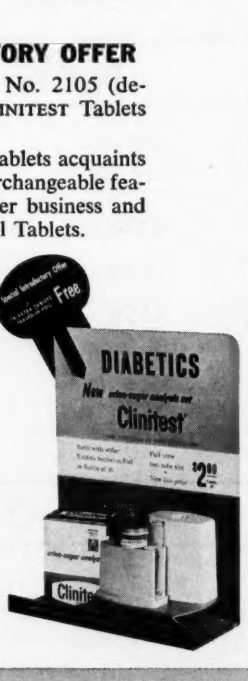
Special Package contains No. 2105 (described above) *plus* 12 CLINITEST Tablets Sealed-in-Foil.

Free refill of foil-wrapped tablets acquaints your customer with the interchangeable feature. You gain new turnover business and customers for Sealed-in-Foil Tablets.

Limited offer—

Order from your wholesaler No. 2104 Counter Display with 4 Special Introductory Packaged Sets

Your cost complete—$4.80



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Branch News

Local Branches

Southeast Wisconsin Branch—The University of Wisconsin Extension Division will join with this APhA Branch during the 1958–59 academic, year to present a special lecture series for pharmacists at Kenwood Campus of the University of Wisconsin-Milwaukee.

Faculty members of the Wisconsin Extension Services in Pharmacy and Association representatives met in Madison July 9 to set up topics and dates for the series. This series will be presented in five lectures and seminars and will feature speakers to be chosen from the university faculty and the pharmaceutical industry.

The scheduled program will include the following subjects and dates: October 14, "Services I Expect from My Pharmacist"; November 11, "Pharmacology and Physiology of the Diuretics"; January 12, "Customer Motivation for Greater Sales in Your Pharmacy"; February 10, "Advances in Blood Research and Their Relation to Pharmaceutical Practice"; and March 8, a seminar on "Advances in Control of Diabetes."

SOUTHEAST WISCONSIN BRANCH EXECUTIVE COMMITTEE meets to plan 1958–59 Lecture-Seminar Series for Pharmacists. L to r: Donald Niebuhr, Casey Zielinski, Aaron Sturgeon, Don Jones, Bob Kniss, Dr. Eunice R. Bonow, and Al Toth.

Student Branches

Creighton University—A portrait of the late *Dean William A. Jarrett* of the College of Pharmacy, presented to *Mrs. Jarrett* on Annual Pharmacy Day at the university, has been given by her to hang permanently in the Dean's Office of the College.

Massachusetts College of Pharmacy—*Dr. John W. Schermerhorn* will again serve as Faculty Adviser for the coming school term. A panel discussion entitled "Pharmacy—Present and Future" will be presented at the opening October meeting. Featured speakers will be *Fred. A. Lawson* of the E. L. Patch Company; *William E. Hassan, Jr.*, of the Peter Bent Brigham Hospital; and *Leonard F. Tibbetts* of Sears & Tibbetts, Inc.

Oregon State College—*President A. L. Strand* has appointed an interim administrative committee for the School of Pharmacy consisting of *Drs. R. S. McCutcheon* and *Leo A. Sciuchetti* with *Professor Herman C. Forslund* as Chairman. This committee will function until the administration has appointed a dean to succeed the late *Dr. George E. Crossen.*

A Seminar to be held October 2–4, as part of the School of Pharmacy's 60th Anniversary Program will include the following speakers: *Louis J. Fischl*, APhA President; *N. W. Stewart* Executive Vice President, National Pharmaceutical Council; *Henry DeBoest*, Eli Lilly and Company; *George C. Straayer*, Schering Corporation; *Arthur J. Longpre*, E. R. Squibb & Sons; and *Dr. L. W. Rising*, Professor of Pharmacy, University of Washington. The APhA Oregon Branch and the Oregon Board of Pharmacy plan to hold meetings in conjunction with the Seminar.

Social festivities of the Anniversary Program will be climaxed by a banquet, October 3, and a dance sponsored by the Portland Graduate Chapter of Kappa Psi, and directly after the closing session of the Seminar at Saturday noon a sports event feature will be the final football game of the season between UCLA and OSC.

West Virginia University—1958–59 officers elected are *Owen E. McKay, III*, President; *Charles E. Snyder*, Vice President; and *Mrs. Freida H. Burns*, Secretary-Treasurer.

Xavier University—1958–59 officers are *Joseph A. Domingue*, President; *Nelson E. Walker, Jr.*, Vice President; *Thomas V. Cook, Jr.*, Secretary; *Charles Collins*, Treasurer; and *Jacqueline D. Evans*, Reporter.

University of South Carolina—1958–59 officers elected are *Tommie R. Bradley*, President; *Bobby Truesdale*, Vice President; *A. Virginia Hogue*, Secretary; and *Ronald L. Crawford*, Treasurer.

University of Texas—1958–59 officers elected are *Ramiro Narro*, President; *Bruce R. LaForce*, Vice President; *Pauline Smith*, Recording Secretary; *Eleanor J. Siemer*, Corresponding Secretary; *Elizabeth King*, Treasurer; *Leaton Clark*, Parliamentarian; *Joe H. Couch*, Orientation Officer; *Roger A. Middleton*, Editor of the *Longhorn Pharmacist*, student publication of the School of Pharmacy; and *Peggy E. Lipscomb*, Reporter. *Dr. F. V. Lofgren* will serve as Faculty Adviser for the coming school year, in the place of *Dr. C. O. Wilson.*

University of Toledo—1958–59 officers are *Donald F. Scheick*, President; *Manuel Wolf*, Vice President; *Marcella Bialecki*, Secretary; and *Phyllis Ann Rudolph*, Treasurer.

University of Utah—Officers elected for 1958–59 are *Gorden D. Jensen*, President; *Clair V. Draper*, Vice President; *Polly Mae Grove*, Secretary; *Patrica Ann Halverson*, Historian; *John P. Collins, Jr.*, Business Manager; *Peggy Ann Kirton*, Editor of the College of Pharmacy publication, *The Pharmic-Ute. Dr. Ewart L. Swinyard*, Faculty Adviser, will serve also as Treasurer.

Members

The Association Extends a Cordial Welcome to the Following Men and Women Who Were Accepted for Active Membership During the Month Preceding Preparation of This Issue.

NEW LIFE MEMBER
Statler, Robert A., Kensington, Md.

☆ ☆

CALIFORNIA
Fujii, Masao, Los Angeles
Hatch, Clyde J., Los Angeles
Mick, Curtis L., San Pedro
O'Malley, Charles R., San Francisco
Paterniti, Peter A., San Jose

CONNECTICUT
Poreda, Thaddeus S., New Haven
Summa, Robert J., Torrington

DELAWARE
Icken, Joseph M., Dover
Muench, Genevieve J., Newark

IDAHO
Carter, Charles W., St. Maries

ILLINOIS
Calisoff, Hyman, Bartonville
Freeman, Paul A., Chicago
Kalom, Henry H., Chicago
Siroky, Ronald J., Chicago

INDIANA
Beecher, J. Evelyn, Indianapolis
Wiley, Eugene F., Evansville

KANSAS
Dusini, Frank L., Fort Riley

LOUISIANA
Bernard, Albert J., New Orleans

MISSOURI
Gillardi, Carl A., St. Louis
Rosenberg, Albert M., St. Louis

MONTANA
Sister Mary Aurita Donovan, Billings

NEW JERSEY
Farri, Elias P., Camden
Hawthorne, Kenneth C., Pompton Plains
Zimmerman, Henry B., Fords

NEW YORK
Colbert, Irving, Long Island City
Drohan, William C., Corning
Ghee, William D., Hyde Park
Greenstein, Murray H., Whitestone
Margolius, Irving R., Albany
Slough, James E., Staten Island
Stover, James W., Brooklyn
Strunk, William G., New York City

OHIO
Hogstad, Anton, Jr., Toledo
Rasich, Michael G., Hamilton

OKLAHOMA
Barrows, Charles L., Tulsa

OREGON
Howard, James F., Lakeview

PENNSYLVANIA
Boenigk, Frances V., Pittsburgh
Freeman, Alan R., Philadelphia
Kruse, Conrad E., Philadelphia
Rupprecht, John R., Carnegie
Souder, John C., Ambler

TENNESSEE
Andrews, John M., Jr., Nashville

UTAH
Aldous, J. Archie, Salt Lake City
Bateman, Alfred V., St. George

VIRGINIA
Johnson, Wilson, Jr., Richmond

WEST VIRGINIA
Dodd, Dolores M., Huntington
Hershberger, John W., Rainelle

Deceased

McCandless, Ronald R., Butler, Pa., July 15, 1958
Nooner, T. A., Hendersonville, N.C., July 18, 1958
Ross, Merritt K., Summit, N.J.
St. George, Dezzo M., South River, N.J., Mar. 18, 1958

INTERNATIONAL
Andersen, K. Mogens B., Guayaquil, Ecuador
Berezowsky, Boris, Saskatchewan, Canada
Casenas, Lucia S., Quezon City, Philippines

NEW SECRETARY OF WISCONSIN STATE BOARD

Paul A. Pumpian has been selected as the new Secretary of the Wisconsin State Board of Pharmacy, to succeed *Sylvester H. Dretzka. Arthur C. Moin*, Board President, stated that the members of the Board felt that a person trained in both Pharmacy and Law, as Mr. Pumpian is, would have ideal qualifications for a position which requires thorough understanding of both fields. Mr. Pumpian was selected from among a number of candidates because of his academic training, experience, and activities in Pharmacy. Formerly a resident of Baltimore, he now lives in New Brunswick, N.J., where he is associated with E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation. He received his degrees in Pharmacy and Law from the University of Maryland, is a Registered Pharmacist, a member of the Maryland Bar and a registered patent attorney. Mr. Pumpian is First Vice President of AACP, and has been a member of the legislative committees of the Maryland Pharmaceutical Association and the Middlesex County (N.J.) Pharmaceutical Association. Also active in APhA, he is Secretary-Treasurer of the Section on Education and Legislation, Vice President of the Northern New Jersey Branch, and a member of the Legislative Committee. He will assume his position as Secretary of the Wisconsin Board on January 1, 1959. Mr. Dretzka will continue to serve on the Board after his resignation as Secretary becomes final.

Coming Events

New Hampshire Pharm. Assn.—Sept. 14–16, Sunset Hill House, Sugar Hill, N.H.

Staphylococcal Disease Conf.—Sept. 15–17, Com. Dis. Center, PHS, Atlanta, Ga.

Maine Pharm. Assn.—Sept. 21–23, Poland Springs Hotel, Poland Springs, Me.

Wisconsin Pharm. Assn.—Sept. 21–23, Wausaw Hotel, Wausau, Wisc.

Natl. Assn. Retail Druggists—Sept. 28–Oct. 2, 60th ann. conv., Philadelphia.

National Day of Prayer—Oct. 1, Presidential proclamation.

Fire Prevention Week—Oct. 5–11, Presidential proclamation.

Nevada Pharm. Assn.—Oct. 5–6, Reno, Nev.

Vermont Pharm. Assn.—Oct. 5–6, Basin Harbor Club, Vergennes, Vt.

NABP and AACP—Oct. 6–7, Dist. No. 1, ann. mtg., Kenmore Hotel, Boston.

U. of Okla. Col. of Pharm.—Oct. 7, ann. pharm. day.

Second Int. Mtg. of Pharmaceutical History—Oct. 7–9, Venice, Italy.

Antibiotics Symposium, 6th—Oct. 15–17, Willard Hotel, Washington, D.C.

United Nations Day—Oct. 24, Presidential proclamation.

American Heart Association—Oct. 24–26, 10th anniv., Civic Center, San Francisco.

American Public Health Assn.—Oct. 27–31, 86th ann. mtg., St. Louis.

Assn. of Consulting Chemists and Chem. Engineers, Inc.—Oct. 28, 30th ann. mtg., Biltmore Hotel, New York City.

Parenteral Drug Assn.—Oct. 29–31, ann. mtg., Hotel Statler, N.Y.

APhA House of Delegates—Oct. 30, 31, Interim mtg., Conrad Hilton Hotel, Chicago.

Univ. of Wisconsin—Nov. 6–8, Fall Pharm. Institute.

Gerontological Society, Inc.—Nov. 6–8, 11th ann. mtg., Bellevue Stratford, Philadelphia.

American Education Week—Nov. 9–15.

Veterans Day—Nov. 11. Presidential proclamation.

Diabetic Detection Drive—Nov. 16–22. Sponsor: American Diabetes Assn., New York 17.

Air Pollution Conference, natl.—Nov. 18–20, 1958, Washington, D.C.

Thanksgiving Day—Nov. 27.

APhA N.Y. Branch—Dec. 10, Remington Dinner 1958 recipient, Roosevelt Hotel, New York City.

Proprietary Assoc.—Dec. 11–13 Ann. Research & Scientific Dev. Conf., Waldorf-Astoria, New York.

APhA 1959 Conv.—Apr. 19–24 1959, Cincinnati, Ohio.

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Each single-dose CLYSMATHANE (Fleet) squeeze bottle is ready-to-use with pre-lubricated rectal tube . . . especially designed for easy self-administration. Each unit contains 0.625 Gm. of Theophylline Monoethanolamine (Theamin, Fleet) . . . supplies prompt therapeutically adequate blood levels of Theophylline . . . no side effects, no irritation of rectal mucosa even after repeated use.

New Prescription Package contains six single-dose units of CLYSMATHANE (Fleet). Labels on the carton front and on individual units may be readily removed, if desired.

For further information, write your wholesaler or

C. B. FLEET CO., INC.

Lynchburg, Virginia

Current Comment

Segregated Blood

Since July 30, 1958, the State of Louisiana has required by law that blood plasma be labeled according to race, although there is no detectable difference between the blood of a colored and of a white person. The legislation does not apply in disaster areas or in individual cases where the physician decides that an emergency exists.

The VA hospitals in this state rely to a large extent on blood donated to them from outside Louisiana. If the area of the source of supply does not label blood according to race, then it will be difficult for the VA to obtain blood which is marked according to the segregation legislation.

Misuse of Asthma Preparations

According to a notice received from Floyd N. Heffron, Executive Secretary of the California State Board of Pharmacy, a number of cases have recently been reported by law enforcement agencies where juveniles and young adults have misused asthma powders containing belladonna and stramonium by taking them internally. Toxic delirium and hallucinations result. Pharmacists should limit the sale of these products to adults or cases where the need for the product is known. Manufacturers, wholesalers, and retailers should report any unusual demand for these products, and if the problem increases, restrictive legislation for these products may be necessary.

Cancer Research Contracts

A new policy statement, developed by the Patents Board of the Department of Health, Education, and Welfare, specifies policies governing patents on products or processes which may be developed by private industry under Government cancer research contracts. The procedures under which the Surgeon General could act are as follows:

1. The Surgeon General would maintain close consultation with the contracting company to apprise it of public needs and assure the producer a reasonable opportunity to meet them.
2. The Surgeon General would consider the advice of appropriate consultants and advisory bodies before determining whether it is necessary in the interests of public health to license additional manufacturers.
3. The Surgeon General would be required to give 90-day advance notice to the original contractor of his intention to intervene. The original contractor would then have 20 days to request a formal hearing. At the end of the 90-day period or upon conclusion of the hearing, whichever is later, if the final decision is that the public need has not been met, the Surgeon General could open the way for production by additional manufacturers.

The cancer chemotherapy program to which this policy statement relates is jointly sponsored by the Public Health Service's National Institutes of Health, the American Cancer Society, the Damon Runyon Fund, the Atomic Energy Commission, the Veterans Administration, and the Food and Drug Administration.

During fiscal year 1958, a total of $25,000,000 was appropriated by Congress to the National Cancer Institute for the cancer chemotherapy program. Most of the funds were used for grants and contracts to support research in medical schools, universities, and other nonprofit research centers. Over $4,000,000 was utilized for 17 research contracts with 13 chemical and pharmaceutical houses.

A significant expansion of industry's role in the cancer chemotherapy program is planned during fiscal year 1959. The Congress appropriated almost $30,000,000 for cancer chemotherapy, of which $10,000,000 will be used for research contracts with industry.

Fifth Column Weapons

In a new book, *Inspection for Disarmament* prepared by a team of scientists, the following possibilities for fifth column weapons have been discussed.

1. Germ warfare or psychologically debilitating agents.
2. Crop or animal poisoning of a cumulative and permanent type to create mass starvation, delivered by mice, bees, plants, etc.
3. Invisible radioactive aerosols sprayed on movie seats, subway seats, etc. to deform and depopulate the enemy.
4. Narcotic addiction by latent inclusion of a narcotic in aspirin tablets, popular candy, liquor, etc.
5. Drug causing sterility after several exposures included in common tablets, foods, etc.
6. Insect or rodent invasion to upset crop balance or spread diseases.
7. Disrupt communications through a campaign of incendiary white phosphorus letters that burn when completely dry to destroy contents of mail boxes, post offices, airplanes, etc.
8. Corrosive lubricating oil to destroy power generators, turbines, locomotives, automobiles, machinery, etc.

Care of Burns

Parents should know how to identify and treat burns which cause more injury and death among children than any other accident. Rules for preventing and caring for burns are given in the latest issue of *Today's Health:*

1. Because youngsters grasp anything within reach, never allow conditions to exist which lead to accidents; keep matches from children; keep pots from the edge of the range; and keep youngsters from fires.
2. Determine quickly the degree of burn—first degree, the skin is red; second, the skin is blistered; third, the skin is charred.
3. For first or simple second degree burns, coat the affected area with an antiseptic ointment, olive oil, or baby oil. This relieves pain and prevents the skin from cracking and drying out.
4. For deep second and third degree burns, call a doctor immediately, since shock and infection may occur. A layman should not try to treat either.

Womanly Interests

In a recent speech Miss Dorothy Noyes, Vice President and Treasurer of Noyes & Sproul, Inc., ethical pharmaceutical advertising agency, New York, urged women to play their part on their local health teams.

Miss Noyes described health conditions in a typical town of 50,000 as follows: 60 persons will die of cancer this year; 28 or 29 will be killed in accidents, while several times as many will be permanently disabled; 15 or 20 of the 1,200 babies born this year will arrive as serious abnormalities; and the alcoholics will number well over 1,000, including nearly 200 women.

Pointing out that the United States is behind Norway, Sweden, The Netherlands, England and Wales, New Zealand, Canada, and Israel in life expectancy, Miss Noyes urged women to join in making their towns twice as healthy as they are at present.

Live Polio Vaccine

A total of 244,596 inhabitants of the Belgian Congo and Ruanda-Urundi, including both sexes and all ages, received a live vaccine containing the Chat strain, Type 1 polio virus by tablespoon doses orally. The Fox III strain of Type 3 virus was also received by about 1% of these people. After the vaccination, no more cases of paralytic polio were reported in four localities involved in outbreaks of the disease.

The five physicians making the tests were: Drs. Hilary Koprowski, Director of the Wistar Institute, Philadelphia; G. Courtois, Director of Laboratoire Medical, Stanleyville, Belgian Congo; A. Flack, Medical Director, Clinton Farms, Clinton, N.J.; G. A. Jervis, Director of Laboratories, Letchworth Village, Thiels, N.Y.; and G. Ninane, also of Laboratoire Medical.

Letters

Appreciation to APhA

Sir:

Just a card to say thank you for the very prompt and efficient answer to a recent problem that I sent the APhA. Great to be a member of such an organization as the APhA.

Marlin Yates
640 No. Anderson Blvd.
Geneva, Ill.

Journal Subscription Awards

Sir:

Two 5-year subscriptions to the *Practical Pharmacy Edition* of the AMERICAN PHARMACEUTICAL ASSOCIATION have been awarded as prizes to students of our Faculty of Pharmacy by the Alberta Pharmaceutical Association.

E. F. Hunter, Purchasing Agent
University of Alberta
Edmonton, Alberta, Canada

Pill Pusher

Sir:

In a TV interview this afternoon, Mrs. Leona Baumgartner, New York City Health Commissioner, used the term "Pill Pusher" to denote a *practicing* physician as distinguished from a physician engaged in other branches of medicine, such as research.

I have always understood the term "Pill Pusher" to indicate a physician who has been trained by certain manufacturers and their salesmen to dispense instead of prescribe.

I wonder how other pharmacists understand the term.

Edwin Taiber
818 Monroe Street
West Hempstead, N.Y.

National Fair Trade

Sir:

Thank you most sincerely for your letter and for sending me a copy of the statement made by our ASSOCIATION President, Mr. Louis J. Fischl, before the Senate Interstate and Foreign Commerce Committee in support of Fair Trade Legislation.

As you know, I am a co-sponsor of S. 3850, and I am very pleased that your fine group has endorsed this measure. I very strongly agree with Mr. Fischl about the urgency at this time of providing adequate legislation which would insure reasonable and honest competitve practices at the retail level. You can depend on me to do everything I can to get my bill out of the Committee and considered by the Senate during this session of Congress.

I am enclosing a copy of a release about a statement I made before the Senate Interstate and Foreign Commerce Committee on July 21 concerning Fair Trade Legislation, which I believe will be of interest to you.

William Proxmire
U.S. Senate

Editor's Note: Senator William Proxmire (D–Wis.), co-sponsor with Senator Hubert H. Humphrey of S. 3850, has called passage of a national fair trade law "the only proposal now before Congress that will help the vast majority of American small businessmen." Senator Proxmire said:

> Small business is in serious trouble. All objective evidence—the number of failures and voluntary discontinuances, their level of return on invested capital, and their share of the national production—shows that small business is steadily losing ground to big business and has become a prime victim of the recession.
>
> The small retail business is an efficient economic unit but characteristically lacks capital. This lack of capital means that the large competitor—the chain store or massive supermarket—even if less efficient, can engage in price-cutting operations until the little business is driven out.
>
> The small businessman is fervently and completely opposed to subsidies, even for himself, but the one form of legislative protection he desires, needs, and deserves is action by government to provide the kind of margin between what he pays and what he receives which will permit him to operate on a stable and efficient basis.

Sir:

Thank you very much for sending me a copy of the statement on fair trade competition which Mr. Louis J. Fischl, President of the AMERICAN PHARMACEUTICAL ASSOCIATION, submitted to the Senate Interstate and Foreign Commerce Committee.

Mr. Fischl's treatment of the principles and purposes of fair trade competition is superb. I hope that he will be able to send copies of his statement to every retail druggist in the nation.

Hubert H. Humphrey
U.S. Senate

More on Certificates

Editor's Note: A large volume of complimentary comments from our members continues to pour in daily as a result of the distribution of permanent membership certificates (see pages 75 of the Feb. issue and 410 of the July issue of THIS JOURNAL). A few of the more recent typical comments are reproduced below.

"An unusual tribute to the men and women who enroll under the Banner of the APhA. A rich reward to me after 69 years of work as a pharmacist."

Carl S. Preble
Dudley St.
Bangor M.R.A., Maine

"I am extremely proud of this certificate. I am going to have it plasticized."

Frank J. Casale
5709 R St., S.E.
Washington 27, D.C.

"Magnificent—outstanding achievement. Good luck and carry on."

Louis Vinciguerra
317 Beachwood Blvd.
Beachwood, N.J.

"Its simplicity reveals its dignity."

Davis A. Morris
5817 S. 50th St.
Omaha 7, Nebr.

"A significant advance. Excellent."

Wm. D. Brandenburg
603 W. Kiernan
Spokane 18, Wash.

"Will add to my pharmacist's prestige by keeping it on open display."

Joseph. T. Woodson
Woodbury, Tenn.

"I think the certificate is excellent—professional in all respects."

Alonzo Sudler, Jr.
1745 Arnold Ave.
Willow Grove, Pa.

"A beautiful certificate worthy of a fine organization. Am having it plasticized at once to preserve it permanently."

M.I. Johnson, Jr.
520 Fair Hope St.
Augusta, Ga.

"I like the permanent certificate—excellent job on design and color."

Mona Roesner
1318 George St.
Midland, Mich.

"Beautifully done. Thank you."

Sister Zoé Shaughnessy
2500 W. Grand Blvd.
Detroit 8, Mich.

"A nice and beautiful birthday present. Thanks a million."

Robert I. Baker
10126 N.W. 27th Ave.
Miami 47, Fla.

"Certificate is a very artistically planned piece of work, that everyone can be proud to possess."

Frank W. Gechter
19039 W. Lake Rd.
Rocky River 16, Ohio

Editorial

Time for a Movie

Now is the best possible time to produce a "supercollosal" movie about Pharmacy so interesting in content, so forcefully presented, so memorable that it will be avidly wanted for use on TV and in movie theaters across the Nation. A dramatic theme based on man's greatest yearning, his desire for health, can be interwoven throughout the production as the thread which binds it together.

We fully realize that much has already been attempted with film presentations. There are long lists of short movies, each touching on some aspect of our profession. We have *Design for Life*, *Time for Tomorrow*, *For More Tomorrows*, *To Your Good Health*, *Druggist . . . or Pharmacist*, and many others which have served a useful purpose. But, in our opinion, not a single one of these has really dramatized the story of Pharmacy in such a manner that the public has looked and looked again and retained a lasting and highly favorable impression.

Of course there are also long lists of medical movies, both of the educational type for physicians and the public relations type for wide distribution. All of these, like *Monganga* and *Hemo the Magnificent*, subtly tend to elevate the practice of medicine in the minds of the public. Interestingly enough nearly all of these films have been created by the pharmaceutical industry either directly or indirectly. At least they are financed by the industrial segment of Pharmacy.

In this regard we may have sold ourselves short, by looking merely at immediate gain rather than the greater benefits of a long-range approach. It is certainly highly commendable to support Medicine and all other members of the health team. We must continue to do that. They need as much help as we do. But let us not be so philanthropic or misguided in our thinking that we support the rest of the team exclusively and completely neglect ourselves. This can create as serious a defect in the health field as if we concentrated completely on ourselves.

An example of the type of presentation we have in mind will reveal the entire gamut of Pharmacy's remarkable contribution to the health of living things, not only of human beings but of plants and animals as well. The sudden stroke of genius or combination of circumstances which brings into being an idea for a new "wonder drug," the thrilling spectacle of modern pharmaceutical research and development, mass production, promotion and sales, wholesaling, practice in retail and hospital pharmacies, and administration of a life-saving drug to a seriously ill patient, can all be included.

An intriguing story, based on true incidents can certainly be developed. The production, as an authentic work, will capture the attention of the audience and permit public relations emphasis of the proper type to reach the subconscious minds of the viewers. The only way we can get the true story of our scientific and professional achievements across to the public *en masse* is by means of a popular treatment of the subject in the mass media of communication, especially TV. An inspirational movie with a "catchy" title is the right answer.

The movie must have a story filled with human interest to hold the attention of the audience. The major objective of the film, as far as we pharmacists are concerned, will not be obvious. We do not wish to be accused of overdramatizing our health field, but all we really have to do to achieve tremendous impact is to present our story as it actually is. Let us weave together the whole chain of activities from the idea for a new drug to the restoration of health in a patient. Let Pharmacy receive a little public recognition for making the practice of medicine the success it is today.

The Idea

We can visualize many scenes depicting the advent of an idea. We can envisage a sudden intentness of expression, the outward reflection of a properly attuned mind as it receives an idea from looking at recipes for ancient remedies in musty, dusty tomes stored and long-forgotten. We can see the face of a day-dreaming pharmacist suddenly light up midst his flasks and microscopes and pumps and photometers as he watches a reaction mixture refluxing.

We can see Sir Alexander Fleming standing by his laboratory window in 1928 and exclaiming: "This is a rum go!" as he observes for the first time a penicillin-produced zone of inhibition. We can see soil samples being collected in Venezuela for antibiotic testing and crude drugs being collected in darkest Africa for steroid research. The possibilities of showing the search for ideas for new wonder drugs are endless.

Research and Development

No field of activity captures the popular fancy as much as the word "research." Dramatic scenes in the laboratories of the colleges and of the pharmaceutical industry can develop interest in Pharmacy and enhance the public's respect for the total professional-industrial complex as it really is.

We can see Paul Ehrlich injecting his 606th arsenical into apes in 1907 to begin the era of chemotherapy. We can see characters in the movie pipetting culture media and injecting drugs into test animals and administering a newly created life-saving tablet to a patient in a hospital clinic.

A little imagination on the part of the producer of the movie can result in greater public understanding and appreciation of what tremendous efforts in terms of money and personnel go into the thousands of expensive attempts which result in a handful of useful medicines. Carefully selected, enthusiastic consultants with a broad knowledge of Pharmacy can help make the movie completely authentic and technically correct.

Production

The phrase "mass production" is on everybody's lips and is written and heard constantly. Yet relatively few people have any idea what the term actually means when applied to drugs. Just a few carefully shot scenes will show millions of people what Pharmacy has really accomplished. It will be particularly effective to contrast the making of drug products by hand at the turn of the century with the precisely controlled, automatically, mechanically produced dosage forms being spewed forth by the billions just 50 years later.

We can show a thousand-foot corridor in a modern drug production plant lined on both sides with sterile laboratories and tablet machines and huge fermentation vats. We can show automatic equipment filling bottles or counting tablets, capping, labeling, packing containers into cartons, the cartons into larger boxes, and all being sealed ready for shipment, the entire operation untouched by human hands. Freight cars and airplanes flying internationally can be shown carrying these machine-packaged drugs to the markets of the world.

Promotion

One of the characters in the plot certainly should be a salesman—not just a run-of-the-mill salesman but a real "top-notch" man with a scientific background. *The Organization Man, The Man in the Grey Flannel Suit, Executive Suite,* and many other titles come to mind as we think of the combined efforts of the Madison Avenue agencies and the drug company executives planning to psychoanalyze the public, as well as physicians and pharmacists, in attempts to use modern approaches to expand drug sales.

The salesman can be shown snarling at his wife as he comes home one Friday night because he has sold only 9 carloads of aspirin tablets instead of 10, one less than his quota for the week. His chief competitor, it can be disclosed, has discovered how to combine plate-like and needle-like crystals so that the tablets disintegrated in just 2 seconds when dropped in a glass of water in front of a TV camera. But everything can improve somewhat when the salesman's company learns to add buffering which causes the tablets to pop rapidly out of the stomach, like pellets from a shotgun, into the pipe-like structure of the bloodstream. The salesman's headaches can continue to mount, however, until he transfers to a so-called "ethical manufacturer" and becomes truly happy as he sells physicians on the idea that his wonder drugs, sold only on prescription, are the most effective life-savers that money can buy.

Distribution

In some manner the story about drug distribution from the 1400 manufacturers to the 2800 wholesale outlets, the 53,000 retail pharmacists, the 3800 hospital pharmacies, the numerous nursing homes, and other related institutions can be depicted. The heroine of the story can become seriously ill and the effectiveness of modern drug therapy and the efficiency of drug distribution can be demonstrated.

The pharmacist can be shown playing his part during a mass H-bomb attack. The distribution of the immense stockpiles of critical drugs, stored by the Defense Department of our Government can be shown. When the smoke clears away and a handful of people remain, one of them at least can be a pharmacist who can be especially helpful when starting a new civilization.

Auxiliary Services

Not only the direct chain of events from the idea for a new drug to a cured patient can be shown but also the colleges, the educators, the students, the drug legislation activities in Congress and the State Legislatures, drug law enforcement programs, court cases involving medication and quackery, association activities, pharmacists in public health and the Armed Services, and many other phases of Pharmacy.

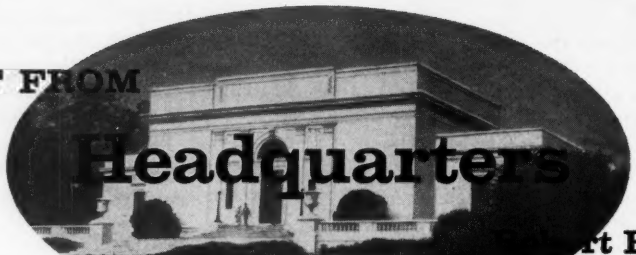
It would probably be impractical to incorporate all the pharmaceutical facets into one movie as the possibilities are so extensive. All we need is a powerful story. The pharmaceutical theme can be woven into it.

Once a decision is made to go ahead with a motion picture of the type visualized, the first step should be to make additional depth surveys of the public and to re-evaluate the information we already have. We can determine which "hidden persuaders" will be most appropriate, most effective, when properly understood and utilized. The creation of the film must be a carefully planned project, not a hasty attempt to be the first one to do it. It must be done on a cooperative basis with representatives from every segment of Pharmacy. One possible coordinator for such a project is the Health News Institute.

Now is the best possible time to create such a motion picture because recruitment problems are becoming more difficult in the face of an explosively expanding population that must be supplied with needed medication at a time when the student reservoir is low. In our increasingly competitive society there is going to be a fierce fight ahead if we are to attract the best possible young minds into our midst and give them a lasting *esprit de corps* which will maintain the professional as well as the economic status of Pharmacy.

Eric W. Martin

STRAIGHT FROM Headquarters



rt P. Fischelis,
Secretary

Undergraduate and Continuing Education

In September our thoughts turn naturally toward education. It is the month in which schools and colleges resume their programs after the summer vacations. This is also the month in which local and student branches of the AMERICAN PHARMACEUTICAL ASSOCIATION line up their programs for the current ASSOCIATION year.

We take this opportunity to welcome incoming classes to the 76 accredited colleges of pharmacy and urge them to utilize the forthcoming weeks, months, or years to the fullest extent in preparing for the professional careers to which they have decided to dedicate themselves.

We also urge our local branches to work closely with state pharmaceutical associations and other organized groups in helping colleges of pharmacy to develop refresher courses, seminars, institutes, and other types of educational programs intended to provide the necessary continuing education for those already engaged in the professional work of Pharmacy. The AMERICAN PHARMACEUTICAL ASSOCIATION has devoted much time and attention to promoting pharmaceutical education. The Constitution of the Association states that one of the seven objectives of the organization is "to provide a system of education and training in the art of pharmacy, calculated to produce competent personnel for all phases of the practice of pharmacy and the training of pharmacists as a means of providing the greatest protection for the public at large."

The ASSOCIATION accomplishes this objective by extending its fullest cooperation to the 76 accredited colleges of pharmacy listed on the front cover of this issue of THIS JOURNAL. In like manner, the ASSOCIATION cooperates with the 45 voluntary health organizations also listed on the front cover of this issue of THIS JOURNAL, in establishing essential liaison between practioners of pharmacy and these organizations for the dual purpose of keeping pharmacists informed of the programs of education sponsored by these voluntary health organizations and aiding the latter in spreading accurate information to the public as we all work together to provide better community health.

A shining example of what can be accomplished by way of continuing education in our field is the splendid development of the hospital pharmacy institutes of which two are now held each year under the auspices of the American Hospital Association, the AMERICAN PHARMACEUTICAL ASSOCIATION and the American Society of Hospital Pharmacists. Each year there are more applicants for these institutes than can be accommodated. Not only is there formal presentation of lectures and panel discussions in the programs of these institutes, but there are many informal sessions throughout the week in which these institutes are in progress permitting an interchange of ideas and procedures which constitute an invaluable asset in the teaching process.

The Catholic Hospital Association in cooperation with the APhA and the ASHP also conducts an annual Hospital Pharmacy Institute.

The benefits derived by pharmacists from close association for a number of days each year, with ample opportunity for study and discussion, emphasize the value of taking suffcient time to review modern progress in the field of pharmaceutical service.

We cannot urge too strongly that pharmaceutical organizations at state and local levels give serious attention to urging their members to keep themselves abreast of progress in medicine and pharmacy, so that their services will continue to be indispensable to the public and to the other health professions.

National Pharmacy Week

Every pharmacy in the United States has received by direct mail an announcement of the 31st observance of National Pharmacy Week. THIS JOURNAL supplied considerable information in its August issue on the new public health display now available to pharmacists throughout the nation, and the window display contest will again be a feature of the 1958 observance.

A kit containing new addresses suitable for public relations work throughout the year, as well as during National Pharmacy Week, radio and television spot announcements, as well as other material, are available through the office of the Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

If you have not already arranged for participation either through a pharmacy, a public display place, or a college of pharmacy, we shall be glad to send participating order forms and other material giving such details as may be desired.

The cooperation of all our members in the observance of National Pharmacy Week, October 5 to 11, and Founder's Day which occurs on October 7, is earnestly requested in the 106th year of the existence of our ASSOCIATION.

Federal Trade Commission Activities on Antibiotics

The Federal Trade Commission has released its "Economic Report on Antibiotics Manufacture." At the same time it released the Commission's complaint against American Cyanamid Company (Lederle); Bristol-Myers Company; Bristol Laboratories, Inc.; Chas. Pfizer & Co., Inc.; Olin Mathieson Chemical Corporation (Squibb); and The Upjohn Co., citing alleged monopolies and price fixing.

These activities of the Federal Trade Commission are of far reaching importance to the profession of Pharmacy, the drug industry and to the public. They were undertaken, according to the Commission "because of the great public interest in the availability of medicines at reasonable prices, and the substantial share which antibiotics are taking in consumer expenditures for drugs and medicines."

The Report is divided into 10 chapters dealing, respectively, with the Origin of the Industry; The Influence of National Defense on the Development of the Antibiotic Industry; Antibiotic Production and Manufacturers; The Production Process; Marketing Program of Antibiotics Manufacturers; Pricing in the Antibiotics Industry; Analysis of Financial Data Submitted by Antibiotics Manufacturers; Patent Ownership and Licensing in the Antibiotics Industry; Trademarks and Fair Trade in the Antibiotics Industry, and Antibiotics and the Public.

Significantly, the report points out in its introductory paragraphs that "*no study was made of the distribution of antibiotics to consumers through drug stores, hospitals, or other channels.*"

It is impossible in a cursory review of the 361-page "Economic Report on Antibiotics Manufacture" to determine whether, or to what extent, the information collected from the industry and other sources and interpreted by the economists and attorneys of the Federal Trade Commission will support the allegations made in the complaint against the six producers. This will be determined when the firms who are charged with the alleged offenses make their formal replies within the thirty-day period or when they appear at the hearing before an examiner of the Federal Trade Commission in New York on October 1 to show cause why an order should not be entered requiring them to cease and desist from the alleged violations of law charged in the complaint.

The charges in the complaint have been denied by all the accused firms.

In the meantime it behooves all officers and members of national, state, and local pharmaceutical associations to study the report and to take note of the extent to which it may influence public opinion with regard to complaints against high costs of drugs dispensed on prescription or otherwise. The report contains much information that is complimentary to the initiative and resourcefulness of the drug industry, as well as implied criticism of certain procedures. There is however, fair recognition of the industry's endeavor to play its part in bringing to the bedside of the patient the fruits of modern research in Pharmacy and Medicine under the American system of private enterprise.

As public discussion of the report continues, following its submission to the Congress of the United States, to which it was directed, questions will doubtless be raised with regard to the relationship of our patent and trademark laws to the costs of drugs and medicines and to the extent to which modern marketing costs influence the cost of drugs to consumers. The extent to which existing marketing practices are justified may also be questioned.

No one is in a position at this time to pronounce fair and impartial judgment on these practices since thoroughly impartial studies and investigations in this broad area have not been made. The Federal Trade Commission's Report is the first step in this direction. The same data which was made available to the Federal Trade Commission should now be interpreted by private economists and by the drug industry itself. If private enterprise is to be encouraged, as we believe it should be, then essential incentives must be preserved. We believe that the profession of Pharmacy as well as the drug industry will be among the first to insist that competition in this field should be fair and that the production and distribution of medicines should at all times be in the public interest under the free enterprise system.

In order to assist in informing those concerned, the AMERICAN PHARMACEUTICAL ASSOCIATION has supplied Chapter IX and X of the report in mimeographed form. The full report can be obtained from the Government Printing Office, Washington 25 D.C. at $1.00 per copy.

Horatio C. Wood, Jr.

The demise of Dr. Horatio C. Wood, Jr. in April of this year brings to mind the highly distinguished services which this physician rendered the profession of pharmacy. Dr. Wood was well known as a co-author of the *U.S. Dispensatory* for many years, and he taught materia medica and pharmacology both to students of medicine at the University of Pennsylvania and to pharmacy students at the Philadelphia College of Pharmacy and Science for many years. His close contact with the pharmaceutical profession in the work of the revision of the USP made him aware of the problems faced by our profession in its relations with medicine, and he was an exponent of the highest ideals in medical and pharmaceutical practice.

He prepared the basic *Manual on Poisons and Antidotes* issued by the New Jersey Board of Pharmacy, which has been used as a model for similar publications in other states. He also served as an expert witness in some of the more important cases instituted by boards of pharmacy for violations of the Pharmacy Act, dealing with sales of drugs by merchants and other unqualified personnel. We join his family, former students, colleagues. and other professional associates in tribute to a life spent largely in service to humanity.

Not only did he contribute significantly to the literature of medicine and pharmacy, but also to the maintenance of high ethical and professional standards for both. He also had a deep interest in the public health and welfare.

Continued on page 534

Straight from Headquarters Continued from page 533

Dependent's Medical Care Program

By this time it is well known that the requested appropriation for continuance of the Medicare Program has been cut rather heavily by the Congress. This will necessitate greater use of service hospitals for medical care available at these institutions. This was the purpose of the cut in the appropriation. The Department of Defense which operates the Medicare Program through the Office of the Surgeon General of the Army has issued a revised program for providing medical care for the dependents of men in the military service which may be briefly summarized as follows:

1. All eligible dependents who *live with their sponsors* to clear with appropriate designated Uniformed Service authorities to obtain special authority for civilian care. (Where Uniformed Service hospital facilities are available, commanders will be required to base decisions as to whether a certificate will be issued upon the capability of the hospital as determined by the surgeon.) Eligible dependents who *do not reside with their sponsors* are not required to obtain authority other than their identification cards (DD Form 1173).

2. *Emergency medical care*, if authorized under the revised program, may be obtained from civilian sources by all eligible dependents without authority other than their identification cards. Physicians will be required to certify the emergency.

3. *Maternity care* for eligible dependents:
   a. *Residing apart from their sponsors*—may continue to obtain authorized medical care from civilian sources on the basis of their identification cards (DD Form 1173).
   b. *Residing with their sponsors*
      (1) 2d and 3d trimester patients, if under care of a civilian physician on 1 October 1958, will be permitted to continue their care with the civilian physician. However, if for reason of change of station, or other reasons, a change of physician is made, dependents will be required to clear with appropriate designated Uniformed Service authorities for determination of whether care will be made available in a Service facility or whether special authorization will be given for civilian care.
      (2) New and 1st trimester patients, as of 1 October 1958, will be required to clear with appropriate designated Uniformed Service authorities for determination of whether care will be made available in a Service facility or whether special authorization will be given for civilian care.

4. Discontinue all service not clearly specified in the Law for both those living with, and apart from, their sponsors:
   a. Medical care ordinarily rendered on an outpatient basis:
      (1) Injuries not requiring hospitalization.
      (2) Termination visits (when one physician sees patient in his office and turns over to another physician for hospital care).
      (3) Pre- and post-surgical tests before and after hospitalization.
      (4) Neonatal visits (two well baby visits following hospitalization).
   b. Nervous and mental diseases.
      (1) Acute emotional disorders.
   c. Elective surgery

5. Require commanders in areas having more than one medical Service facility to establish a clearing point to assure that all Service hospitals are used to the optimum.

APhA Women's Auxiliary

The Women's Auxiliary of the AMERICAN PHARMACEUTICAL ASSOCIATION is most happy to welcome the following new members who have joined since the Convention in Los Angeles: Mrs. James L. Beuoy, New Castle, Ind., Mrs. R. L. Zinn, Hanover, Pa. and the following Pharmacy Student Wives Club members from Montana State University, Missoula, Mont.: Mrs. Corinne Christopher, Mrs. Clarice Hinman, Mrs. Beverly Nelson, Mrs. Betty Schaal, Mrs. Roberta Vaughan, Mrs. Ann Winfield, Mrs. Nancy Whitaker, Mrs. Shirley Tempel, Mrs. Marlys Werle, Mrs. Eddie Wold.

MEMBERSHIP LISTS AVAILABLE

The 1958 membership list of the Women's Auxiliary is now available to those wishing one. To cover the cost, including mailing, send fifty cents to Mrs. Earl P. Guth and be sure to include your name and complete address.

If any member of the Auxiliary paid dues in Los Angeles and has not received her membership card, please notify Mrs. Earl P. Guth, 533 Acton Road, Columbus 14, Ohio.

TAKING A FALL VACATION?

Members of the Auxiliary are reminded that if they are visiting in the vicinity of Washington, D.C., they will be well rewarded if they include the APhA Building in their itinerary as well as the Hugh Mercer Apothecary Shop in Fredericksburg, Va., which is operated by the APhA. The Hugh Mercer Apothecary Shop Committee of the Auxiliary would be grateful to receive pharmaceutical articles of historical value to be displayed permanently in the Shop. However, before sending any items to the Shop will you please contact Mr. George B. Griffenhagen, Secretary-Treasurer of the Friends of Historical Pharmacy, Smithsonian Institution, Washington 25, D.C., by letter, explaining the background and character of the article available.

Student Section Newsletter

Last May the Student Section of the AMERICAN PHARMACEUTICAL ASSOCIATION distributed the initial copy of a *Student Section Newsletter* which was authorized by the Section at its meeting in connection with the Los Angeles Convention of the AMERICAN PHARMACEUTICAL ASSOCIATION last April.

The *Newsletter* is intended for pharmacy students and is written and edited by students. Miss Joanne O'Brien who is the Secretary of the Student Section and is located at the St. Louis College of Pharmacy and Science should receive communications intended for circulation to members of the Student Section through the *Newsletter*.

Mr. Carl L. Vitalie, Chairman of the Student Section and his co-workers are planning now for the 1959 Section Program and will be glad to receive suggestions for the program as well as suggestions for the *Newsletter*.

Modern trends in

retail selling

by | *Harold W. Pratt**

THERE IS no doubt in any of our minds that the past 15 years have been the best in our pharmaceutical lives. It does not matter whether we were in research, manufacturing, teaching, wholesaling, or retailing—the road we have travelled has been straight ahead with unusual speed. Earnings have been steadily increasing; opportunities have become better and better. All this has been because we have been aware of the need for action—aware of the dangers facing us—and have been willing to fight, to keep alert, and to take chances.

Our manufacturing members have spent increasing millions on expanded research and plant facilities resulting in unheard-of volume and profit for themselves and in turn for our wholesaler partners who have spent tremenous sums for improved facilities and services to us retailers on the other end of the line.

Volume and Supermarkets

It is true we have at times critized these same manufacturers for duplications and accused them of making our inventory problems greater. Yes, we have accused the wholesaler too of many "crimes" during these past 15 years. Yet we as retailers have seen our dollar volume figures reach heights never dreamed of before. And while there have been many cries of complaint from some of our number about high salary rates, low gross profit percentage, and stealing of pharmacy sales by other retailers, we have reached all-time high dollar profit figures.

There are those among us who are asking, "How long can this go on?" They are telling us we are on the brink of real trouble. There is confusion on all sides. Government sales restrictions have been criticised by some as being too severe and by others as being not severe enough. Just look through your journals and read some of the headlines:

"NEW JERSEY COURT BACKS SUPERMARKET ON SALE OF DRUG PRODUCTS"
"NEW COAST BILL SEEKS TO RESTRICT GROCERY, DRUG SALES"
"MINNESOTA JUDGE REJECTS PHARMACY BOARD'S OPINION"
"SUPER MARKETS TAKE EVER-INCREASING SHARE OF DRUG STORE MARKET"
"DON'T OVERESTIMATE THE STRENGTH OF SUPERMARKETS"

Take your choice—you can read, listen, and become more and more confused.

HAROLD W. PRATT, a Registered Pharmacist in Minnesota, has been Director of Professional Service of Walgreen Company since 1945. After receiving his Ph.C. degree from the University of Minnesota College of Pharmacy, he went with Walgreen's in Minneapolis as Pharmacist and Assistant Manager, became Store Manager, and subsequently headed several Walgreen stores. Mr. Pratt is Chairman of the APhA Section on Pharmaceutical Economics; Chairman of the Advisory Committee of the University of Illinois College of Pharmacy; State Drug Advisor to the Illinois Department of Welfare; and Chairman, Public Relations Committee, Illinois Pharmaceutical Association.

* Presented to the Section on Pharmaceutical Economics, APhA New York Convention, May 1, 1957.

Teamwork Needed

In spite of the new modern tranquilizers available, I would suggest before we use them that we sit down and relax for a minute. Sure we have problems, but are we doing what is needed to solve those problems or are we fighting among ourselves, weakening our chances to face our common foe? Have we reasoned it out or are we just sniping at each other in vain—all the time becoming more vulnerable to external harm? I would like to borrow the words of Dr. Robert L. Swain:

"Teamwork fighting is our most basic need. The drug topics 'lost sheep crusade' was built and put on the road so as to bring about a team-work approach to the competitive problems now reaching the hurricane stage throughout the country. It was based upon the sure-fire principle that the drift of basic drug store merchandise lines over to the well-oiled non-drug outlets could be slowed down, even halted, if every retail pharmacist coast to coast would do his level damnedest to keep the drug business in the drug store. Teamwork such as this would be unbeatable. Put it down as gospel that the collective, sustained, and practical efforts of all retail pharmacists to merchandise, push, and sell the long established drug store lines, now reaching for the moon in the high-speed non-drug outlets, would pay off in greater volume, better profits, and a more secure competitive position for retail pharmacy as a whole.

While we know, of course, that you, the retail pharmacists of the country, are doing a bang-up distributional job which saw drug store volume zip above the six billion dollar mark last year, we also know that your non-drug competition is outrunning you in the race for volume in your own product field. In other words, the market for basic drug store merchandise lines is developing at a faster rate among the non-drug outlets than with you.

The situation is so real, so urgent, so challenging that we again urge you to go all out in your resolve to keep the drug business in the drug store. Tie in with

our 'lost sheep crusade.' It is your surest means of winning this fight to keep the drug business in the drug store—that is, if that's the way you want it!"

We are not going to get the kind of help we need from the courts. Educational programs aimed at unrealistic dreams are not going to stop progress. The only way we can win is to be realistic. We must be progressive if we are to stop nondrug competition from outrunning us in this race for volume in our own product field.

Modernize Our Methods

We have the ability and the know-how, but we are, in too many circles, unwilling to accept change, unwilling to modernize our marketing methods. We are prone too often to rely on what we call our inherent right and unwilling to believe the facts as others see them.

As a group, we go too far in our demands upon the courts and are not ready to accept cold reality. There are, however, in our midst those who have seen the light, who have not been afraid of change or hard work, who have taken the gamble and are winning the battle with the nondrug outlets in their own communities. Some of you, I know, sat in the House of Delegates meeting with me in Detroit last year and heard the resolution passed condemning self-service in drug stores. That, to me, was a serious mistake. It put us on record as being short-sighted and unrealistic. How much better would it have been if we had spent our time trying to help fit this same "modern" merchandising program into our professional picture. We know that the public wants that type of store. Again let us look at a few headlines in our own pharmaceutical journals:

"STORE CONVERTS TO SELF-SERVICE—VOLUME BOOMS."
"SELF-SERVICE UPS VOLUME 60%."
"EVERY DEPARTMENT GAINS IN SELF-SERVICE."
"PRESCRIPTION VOLUME DOUBLES AFTER CONVERSION OF SUNDRIES TO SELF-SERVICE."

How silly then can we get? Do we realize that Avon cosmetics with their house-to-house approach had a volume of over $70,000,000 of "our" business last year? Don't we care that food stores had a 13% increase in cosmetic volume last year? Isn't it important to us that we do 3% of the baby food business today compared to 87% in the grocery stores? Aren't we concerned about our dwindling share of the vitamin market? Isn't it important to us that supermarkets have installed prescription departments and are filling up to 600 prescriptions a day in some stores or that Woolworths and others are following their lead? Aren't we worried about the mail order vitamin houses advertising for prescription business? I believe we are. *American Druggist* tells us that 25% of all pharmacies are now on self-service. According to their report 12,865 pharmacies have adopted this modern selling technique. This is a gain of 26% in one year.

Woolworth figures show volume gains ranging from 15% to 25% without additional clerks being added when conversion to self-service has been completed. We know what self-service has done to the grocery store. Compare, if you will, the over-all condition of the old-time grocery store to today's clean, bright, modern supermarket. Compare the dollar profit picture of the two. Who will deny this is progress of the kind with which you and I are happy? The same will be said about the pharmacy of tomorrow.

Certainly we are going to have more exclusive prescription shops in the days ahead and more neighborhood pharmacies. We will even have a few conventional pharmacies as we have known them for so many years, but they will be in selected locations. The neighborhood pharmacy of tomorrow is going to be a sparkling bright store with a prescription department we can be proud of and where the pharmacist will have time to take personal care of his prescription customer in the manner he deserves instead of having to drop everything to wait on other customers who would rather browse through the neatly arranged displays of departmentalized merchandise and who will in turn buy a lot more than he could sell them if he took the time. Evidence to date proves this to be true.

How Far Toward Self-Service?

There are many details to be thought over and tried out. How far should self-service go? What departments should be included? Should the prescription department be up front? These and many other details must be given thoughtful consideration and of course will vary with different locations.

Let us talk about some of the objections we have heard discussed from time to time. It is common talk that pilferage is high in self-service. One owner tells me that the improved visibility of the entire store from his station in the prescription department has actually cut his pilferage losses. Another told me that he believes the checkout station serves as a sort of mental deterent to those who had been inclined to be sticky-fingered in his old store.

We have heard, too, that you lose the personal touch with your customers so necessary in this drug business of ours. This remark comes from those with no personal experience in the modern store. Typical remarks from owners of today's self-service pharmacy go as follows:

"Self-service actually permits me to exchange personal comments with many more shoppers because it is not necessary to spend as much time with each of them."

We have heard it said that people will buy only the small sizes, but actual experience has proved that the customer will buy larger quantities of large size items. Impulse sales are playing a much greater role in this new type of drug store, resulting in volume figures which are very encouraging.

Yes, in spite of the objections which we hear from persons not yet willing to accept this change, we find ever-increasing numbers of converted self-service stores showing 25%, 35% and 50% increases in over-all volume and related increases in dollar profit.

Future Opportunities

There is a tremendous opportunity for retail pharmacy in the future. Our population figure of 174,000,000 today will rise to an estimated 212,000,000 by 1975. This fact alone tells us that there will be available for those of us who want it millions of dollars of added business to be done in drug store merchandising. Are we going to get our share or will we crawl in our shell and cry for help from the legislatures and courts? It is my sincere belief that if we conscientiously want our share we are going to have to take a realistic look at what the public—our customers—want and then give it to them. I do not believe we can push selfish, idealistic, and out-dated methods down their throats.

There is a basic economic law which says, in effect, that *in our competitive system no professional, distributional, or marketing activity can exist for long unless it meets the needs and desires of the public.* With the tremendous growth possibilities ahead we must re-evaluate our practices and forget traditions. We must go out and give the public what it wants. That does not mean we cannot hold on to our professional rights or that we cannot have the type of operation we as individuals desire, but it does mean that we cannot have small groups in our profession fighting progress in other segments. There is room for all types of retail drug stores, and if we as a whole are to get and keep our share of this drug business, we are going to have to learn that.

We are all after the same thing, and if we are to achieve that end we must work together and help each other perfect our particular facet of this complicated business which certainly performs a fundamental and necessary economic and professional service. ■

Second installment in a three-part series on

A rational basis for the preparation of

ophthalmic solutions

By *Sidney Riegelman, Ph.D., and Daniel G. Vaughan, Jr., M.D.*

PART II

Although the last finding was slightly at variance with the results obtained by Floyd and associates, both groups of workers reached the same conclusion, i.e., that vehicles with a nearly physiological pH have no clear-cut clinical superiority over more acid vehicles of low buffer capacity. Since pilocarpine hydrochloride solutions possess the greatest resistance to neutralization of all the common ophthalmic drugs, this conclusion would appear to have wide application.

Stability

The relative stability of various ophthalmic drug solutions has an important bearing on methods of preparation since autoclaving may be required in certain circumstances, and in others it may be necessary for the product to remain stable over an extended storage period.

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The stability of ophthalmic drugs must be considered in relation to the effects of pH and temperature on the active compound. Many of our active drugs, including the commonly used local anesthetics, cycloplegics, and many of the miotics, contain ester linkages, the products of whose hydrolysis are inactive so far as the eye is concerned. At a fixed temperature, the rate of decomposition depends on the pH. In most instances we can expect a drug to be a hundred times more stable at pH 5.0 than at pH 7.0. The accuracy of this estimate is contingent upon the dissociation characteristics of the compound, and upon the relative stability of its free base and cation.

In the past ten years data have become available on the kinetic deterioration of the following ophthalmic drugs.

Procaine and Tetracaine

Higuchi and his associates have studied the ester hydrolysis of procaine[14] and tetracaine[15]. Within the limits of the experimental accuracy of the data, the two compounds showed nearly identical rates of deterioration. It may be predicted that at room temperature (25° C.) and pH 5.0, it would take 19 years for either compound to decompose 50%. At autoclave temperature (120° C.) and the same pH (5.0), the same amount of decomposition would require 36 hours, but at autoclave temperature and pH 6.8, it would take only 10 minutes. Fortunately, tetracaine possesses local anesthetic activity at the lower pH; procaine, however, is topically active only when the pH is above 6.8 and is inactivated by autoclaving.

The similarity of the hydrolysis rates of tetracaine and procaine might have been anticipated from the similarity of their chemical structures. It is safe to conclude on the same basis that Ophthaine® and Dorsacaine® also have similar stability characteristics.

Atropine

The results of a recent study of atropine by Kondritzer[16,17] are applicable to the prediction of its stability under ophthalmic conditions of use. The half-life (time for 50% decomposition) of atropine at autoclave temperature (120° C.) is approximately one hour at pH 6.8 and 60 hours at pH 5.0. This means that it can be sterilized if buffered at pH 5.0 or below. At 25° C. and pH 6.8, the half-life would be 2 years, and at pH 5.0 it would be approximately 130 years.

It should be possible also to predict the stability of homatropine[a] and scopol-

Continued on page 538

[14] Higuchi, T., Havinga, A., and Busse, L. W., *J. Am. Pharm. Assoc., Sci. Ed.*, **39**, 405(1950).

[15] Crotty, M. W., Masters Thesis, University of Wisconsin School of Pharmacy (1954).

[16] Zvirblis, P., Socholitsky, I., and Kondritzer, A. A., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 460 (1956).

[17] Kondritzer, A. A., and Zvirblis, P., *ibid.*, **46**, 531(1957).

[a] Unpublished data presented at the American Pharmaceutical Association Convention in Los Angeles, April 1958, by Patel and Lemberger result in an estimation that homatropine is approximately 1/3 as stable as atropine in solutions of acid pH. At pH 5, one can estimate that the half-life of the drug would be in the order of fourteen years at 25° C. and 10 hours at autoclave temperatures.

Continued from page 537

amine at autoclave temperature when formulated at pH 5.0 since their structures closely resemble that of atropine. This prediction has been confirmed to a certain extent for homatropine by the study of Krantz and his associates.[18]

Pilocarpine

The miotic, pilocarpine, contains a lactone ring which is subject to attack by the hydroxyl ion; if this inner ester-linkage opens, the compounds can isomerize to the inactive isopilocarpine. At pH 6.6 and at autoclave temperature, the half-life is 34 minutes; at the same pH and at room temperature it is 66 days. At pH 5.0 the stability of the compound has not been precisely defined, but it has withstood 24 hours of autoclaving (120° C.) with approximately 5% destruction.[19]

Physostigmine

Unfortunately, physostigmine, probably the most unstable of all the ophthalmic drugs, has been incompletely studied under ophthalmic conditions of use. There has been much confusion in Pharmacy and Medicine as to whether or not a red-colored physostigmine solution still possesses miotic activity. The intensity of the red color is not at all indicative of an extensive hydrolysis since only one molecule in one thousand need decompose to color a 0.5% solution. Thus it could be red-colored and still possess at least 99% of its original activity.

Physostigmine is a substituted carbamic acid ester. On hydrolysis a phenol is formed which is highly reactive to oxidation. Ellis[20] showed that the phenol, eseroline, and its oxidation products rubreserine, eserine brown, and erserine blue, are essentially inactive as cholinesterase inhibitors (less than 1/100 as active as physostigmine). Rubreserine is the intensely red-colored compound which discolors the preparation. Usually one of the salts of sulfurous acid is added to reverse the color, but this does not reactivate the compound.

The stability of physostigmine was studied by Ellis[20,21,22] in a range of pH from 6.0 to 8.0 at 38° C., and by Hellberg[23,24] in a range of pH from 5.0 to 11.0 at 25° C. Analysis of their data leads one to conclude that the compound will require several years at room temperature to decompose 50% when prepared in 2% boric acid solution, and approximately 6 months at pH 6.8.

Certain preliminary studies[19] on physostigmine using a modified method of Hellberg for analysis indicate that a 0.5% solution of physostigmine in 2% boric acid undergoes approximately 15% decomposition during one autoclaving. If 0.2% sodium bisulfite is added to the formula, the solution remains colorless; however, the same degree of hydrolysis has taken place.

In the course of the usual hydrolysis of an ester, an alcohol and an acid are formed and the solution will tend to become more acid. However, the acid formed during the hydrolysis of physostigmine undergoes decarboxylation and the basic methylamine is produced. The pH of the boric acid solution is 4.7 prior to autoclaving and changes to 6.2 during autoclaving. The rate of hydrolysis is accelerated with the pH change.[b] If the drug is prepared in a buffer of pH 6.8, nearly all the activity is destroyed during one autoclaving.

Chlorobutanol

One of the common antibacterial agents, chlorobutanol is also subject to hydrolysis. It is temperature- and pH-dependent but there are virtually no data on the rate of deterioration. Gershenfeld[25] found that the compound no longer possessed bacteriostatic activity for a number of Gram-positive and Gram-negative organisms after autoclaving. Preliminary data indicate that one autoclaving at 120° C. destroys 50% of chlorobutanol when dissolved in water or boric acid.[19]

Epinephrine and Phenylephrine

Certain ophthalmic drugs are subject to other types of deterioration that lead to partial loss of activity. Epinephrine and phenylephrine (Neo-Synephrine) can be oxidized, or in a certain range of pH can be racemized to the inactive *d*-isomers. It has recently been shown that these compounds also react with metals to form insoluble chelates. Pratt[26] has investigated phenylephrine heat stability and found the drug stable to racemization and other forms of deterioration. After 3 hours of autoclaving, almost no change in activity was noted. Recently, a 10% solution of phenylephrine was autoclaved 6 times in our laboratories. The solution discolored but there was no decrease in mydriatic activity. Epinephrine can be autoclaved at least once without loss of activity. It probably can be reautoclaved several times; however, complete data on its stability is not presently available. One to 0.3% of sodium bisulfite[c] is added frequently to phenylephrine and epinephrine solutions to retard discoloration due to oxidation.

From these data, summarized in Table II, one may conclude that a great many ophthalmic solutions will remain

Table II—Stability of Selected Ophthalmic Drugs

Drug	Time for 50% Decomposition pH 5.0 25° C.	pH 5.0 120° C.	pH 6.8 25° C.	pH 6.8 120° C.
Procaine				
Tetracaine	19 yrs.	36 hrs.	...	10 min.
Atropine				
Homatropine	130 yrs.	60 hrs. "stable"	2 yrs.	1 hr.
Pilocarpine	several yrs.	≫24 hrs.	66 days	34 min.
Physostigmine	several yrs.	~1 hr.[a]	6 mos.	<10 min.
Phenylephrine	several yrs	≫2 hrs.	?	?
Chlorobutanol	?	25 min.	"unstable"	15 min.

[a] When properly buffered, methylamine is formed during the hydrolysis, shifts the pH to more alkaline values and thereby increases the rate of hydrolysis.

[18] Pittenger, P. S., and Krantz, J. C., Jr., *ibid.*, **17,** 1081(1928).

[19] Riegelman, S., and Vaughan, D. G., Unpublished results.

[20] Ellis, S., Plachte, F. L., and Strauss, O. H., *J. Pharmacol. and Exptl. Therap.*, **79,** 295(1943).

[21] Ellis, S., Krayer, O., and Plachte, F. L., *ibid.*, **79,** 309(1943).

[22] Ellis, S., *ibid.*, **79,** 364(1943).

[23] Hellberg, H., *Svensk Farm. Tidskr.*, **53,** 637(1949).

[24] Hellberg, H., *ibid.*, **53,** 658(1949).

[b] A completely nonirritating vehicle for physostigmine is listed below:

Citric acid	0.012%
Sodium bisulfite	0.100%
Sodium chloride	0.900%
Distilled water	*q.s.*

Although the initial pH of this vehicle is 3.95, it is formulated with small enough concentration of acidic ingredients so that the tears rapidly neutralize the solution; therefore there is no detectable irritating sensation when this solution is instilled in the eyes. Of the physostigmine present in the solution, 97–99% remains intact after one autoclaving. No change in color is noted. Details of this study will be reported elsewhere.

[25] Gershenfeld, L., *Am. J. Pharm.*, **124,** 363 (1952).

[26] Pratt, E. L., *J. Am. Pharm. Assoc., Sci. Ed.*, **45,** 505(1957).

[c] Unpublished data presented at the American Pharmaceutical Association Convention in Los Angeles, April 1958, by Schroeter, Higuchi, and Shuler includes evidence for a degradation of epinephrine induced by bisulfite. The presence of bisulfite results in a partial loss of the biologically active *l*-isomer. It is not certain whether the same reaction takes place with phenylephrine; however, it is good logic to eliminate this antioxidant from solutions which may be stored or used over an extended period of time.

adequately stable when autoclaved at 15 pounds for 15 minutes if they have been prepared in 2% boric acid solution. This conclusion is in general agreement with that of Morrison[27] and of Allen[28].

Viscosity

In 1945, Swan[29] first reported adding methylcellulose, 4000 cps viscosity type, to contact lens solutions in order to simulate a lubricating action similar to normal conjunctival mucus. He used a concentration of from 0.5 to 1.0% of the gum in an isotonic saline solution as a vehicle for contact lenses.

Recently Mueller and Deardorff[30] have studied the effect of methylcellulose on the therapeutic response of patients to homatropine hydrobromide. They found that a buffered aqueous solution containing 0.25% homatropine hydrobromide produced no cycloplegic or mydriatic response in any of 9 subjects. The addition of 1% methylcellulose, on the other hand, reduced accommodation to 20% and caused a pupillary dilation to 7.0 mm.

By comparing the effect of a plain solution with that of one containing 1% methylcellulose 4000 cps on each eye of the same subject, Mueller and Deardorff found little or no difference in the response at the 1.0% homatropine level. At concentrations of 0.25%, 0.50% and 0.75%, however, the increased contact time obtained with the more viscous methylcellulose-containing solution resulted in greater therapeutic response. It is likely that the principal benefit to be gained from the addition of methylcellulose will be increased physiological activity on patients who are refractory to standard treatments.

It should be noted, moreover, that the general use of methylcellulose might pose a number of problems. The compound is coagulated by heating and may not properly disperse on cooling. It is not known definitely to be nonirritating to the internal structures of the eye, and its use in ophthalmic solutions instilled at surgery may therefore be inadvisable. Bacterial filtration of a viscous solution is exceedingly difficult and may be quite impossible with small-scale equipment.

Sterility

The invasion of the cornea by microorganisms is barred effectively by the intact corneal epithelium. Once this barrier is broken, however, there is no defense and organisms may enter the cornea freely and cause infection. One very dangerous and opportunistic organism, which actually grows in the cornea better than in any other known medium, is *Pseudomonas aeruginosa*. This organism is a contaminant of many commonly used eye solutions and particularly of sodium fluorescein solution, a dye often used as a diagnostic aid in the study of corneal injuries.

For the purposes of this discussion, we have used the term "intact eye" to indicate an eye in which the corneal epithelium has not been damaged, and the term "injured eye" to indicate one in which the corneal epithelium has been damaged. The use of sterile eye drops is desirable in the case of an intact eye, but in the case of an injured eye it is an absolute necessity. Fortunately, the vast majority of liquid eye medication is used at home and in the physician's office on eyes whose corneal epithelium is intact. If contaminated drops are instilled into an intact eye, a conjunctivitis may result but will probably be easily brought under control; if they are instilled into an injured eye, on the other hand, serious infection can develop and the eye may even be lost. Therefore, we recommend two standards for the preparation and use of ophthalmic solutions:

1. For the intact eyes, sterile solutions which may be packaged in multiple-dose containers. For home use this implies a single dropper, while in the physician's office separate sterile droppers should be used for each patient.
2. For the injured eyes, small units containing sterile solutions for single-patient use.

There are two general procedures which will insure sterility. These are autoclaving and sterile filtration.

Autoclaving

Autoclaving is almost always the method of choice, particularly since the study of ophthalmic drug stability reviewed above indicates that most ophthalmic drugs in general use may be autoclaved without altering their efficacy if they have been prepared at a proper pH. It is recommended that with certain exceptions 2% boric acid solution be used routinely as the vehicle for ophthalmic preparations (pH 4.7, slightly modified by the addition of each drug). The exceptions are sodium fluorescein, the sulfonamides, and other alkaline drugs (distilled water), and pilocarpine for home use (phosphate buffer at pH 6.8). It is also recommended that small amounts of medication be packaged in containers for single-patient use. If the container is wrapped prior to autoclaving, the outside as well as the inside will be sterile. This will be an advantage at surgery.

Bacterial Filtration

Bacterial filtration, with aseptic techniques in all manipulations, is the second method of sterilizing ophthalmic solutions. This is essential only in the rare instance when a heat-labile drug such as many antibiotics is required in connection with a surgical procedure. A safe, practical, single-use filter membrane has been designed for use with a Swinney adaptor fitted on a syringe. To facilitate rapid handling, the syringe may be the type that refills automatically. The membrane is replaced after each use of the filter, thus reducing the hazard of chemical contamination.[d]

The general application of filtration procedures to the preparation of sterile ophthalmic solutions has been proposed by several workers[28,31]. Small amounts of drug can be trapped in the filtration assembly, however, and to prevent chemical contamination, 3 full assemblies would be required to separate the cycloplegics and mydriatics from the miotics, and these 3 from the other ophthalmic drugs. There is always some danger of a procedural breakdown, moreover, so that samples of the filtered solution should be tested for sterility by standard bacteriological methods at the beginning of the procedure, during its course, and at its end.

On several counts, therefore, bacterial filtration must be regarded as too complicated, too costly in time, and too hazardous by virtue of hidden possibilities of breakdown, for general use. It fails, in fact, to contribute adequately to the sterility of a solution *in use*, which is the end and aim of all sterilizing procedures.

It should be noted here that the sterility of sodium fluorescein solution is a special necessity in ophthalmic practice by virtue of its extensive use as a diagnostic aid in the examination of corneal injury. Autoclaved preparations in special containers for single-patient application, or sterile Kimura fluorescein-impregnated filter paper, should be available. To prepare the filter paper substitute, filter paper strips are impregnated with a 20% solution of sodium fluorescein, and are then dried and sterilized in a glass container in a hot air oven at 150–160° C. for 3 hours. At the time of use, the fluorescein is normally dissolved instantly by the tears, but in rare instances an eye may be so dry that the paper must be moistened first. To maintain sterility, this must be done with sterile distilled water.

Continued on page 540

[27] Morrison, W. H., and Truhlsen, S. M., *Am. J. Ophthalmol.*, **33**, 357(1950); **37**, 391 (1954).

[28] Murphy, J. T., Allen, H. F., and Mangiarcine, A. B., *Arch. Ophthalmol.*, **53**, 63(1955).

[29] Swan, K. C., *ibid.*, **33**, 378 (1945).

[30] Mueller, W. H., and Deardorff, D. L., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 334(1956).

[d] The Swinney filter adaptor and the bacterial retentive membrane are available from the Millipore Filter Corporation, Watertown 72, Mass. The use of this assembly with a 2-cc. Cornwall automatic refilling syringe will allow extremely rapid filtration of a solution.

[31] Parrott, E., Wurster, D., and Busse, L., THIS JOURNAL, **14**, 645(1953).

Continued from page 539

Further details of the procedures recommended for the preparation of sterile ophthalmic solutions will be given below in a special section.

Selection of a Preservative

Preservatives are unnecessary for ophthalmic solutions that are to be instilled into injured eyes or eyes being prepared for surgery, e.g., the homatropine solution to be instilled into an eye that required dilation prior to cataract surgery. Solutions for such purposes should be autoclaved and used on one patient only. This obviates the need for a preservative of any kind. The best of the preservatives, moreover, are irritating to the posterior surface of the cornea, the iris, and the tissues lining the anterior chamber, and for this reason are undesirable as well as unnecessary.

Among the preservatives that have been used in ophthalmic solutions, the following have been studied extensively: polymyxin, benzalkonium chloride, chlorobutanol, certain organic mercurials, and certain phenols and substituted alcohols. Their bactericidal activity was investigated by Riegelman and Vaughan[32] by means of a corneal infectivity test on rabbits. A review of chemical preservatives in ophthalmic solutions has been published by Lawrence[33]. The results will be reviewed in the following paragraphs in the course of a general discussion of the merits of these various compounds as preservatives. It may be said, however, that no one of them is sufficiently free from chemical incompatibilities, or sufficiently rapid in its bactericidal action, to be recommended as the agent of choice in all instances.

Polymyxin B Sulfate

When tested against a group of strains of *Pseudomonas aeruginosa*, polymyxin B sulfate was found to be the chemical preservative of choice. It may be regarded as established, in fact, that no other known agent possesses equivalent antipseudomonal activity. In two years of rather wide use of this compound in a concentration of 1000 units per ml., there has been no instance of a resistant strain or of a sensitivity reaction. However, since there is always the possibility of the development of one or the other of these complications in the use of any antibacterial agent, it is wise to reserve polymyxin for known pseudomonal infections.

There are several other compounds that are bactericidal at a slower rate against both *Pseudomonas aeruginosa* and *Proteus vulgaris*. If a solution's level of bacterial contamination is low enough, and if no proteins or other inactivating substances are added, a preservative can sterilize an ophthalmic solution if there is an extended period of contact. It cannot be too often reiterated, however, that when there is any danger of the development of a serious infection, the only safe procedure is to use solutions of known sterility, i.e., solutions autoclaved in small containers for single-patient use.

Benzalkonium Chloride, U.S.P.

Benzalkonium chloride (Zephiran®) in concentrations ranging from 1:10,000 to 1:100,000 has been recommended as a preservative for ophthalmic solutions. If concentrations of 1:3000 or stronger are used repeatedly, however, the corneal proteins are increasingly denatured and irreversible damage may result. Many contradictory observations have been recorded by workers testing the antibacterial activity of this compound. Lawrence[34] compared its effect on 29 strains of *Pseudomonas aeruginosa* and on a number *Proteus vulgaris* strains with the effect of many other potential preservatives for ophthalmic solutions. Six of his strains were re-tested by Riegelman and Vaughan[19] by means of an identical *in vitro* procedure and a rabbit corneal infectivity test. While Lawrence reported that a 1:10,000 solution was bactericidal in 30 minutes, Riegelman and Vaughan found viable organisms present during at least 6 hours of continuous exposure to the preservative. The level of contamination in these tests was exceptionally high, yet there appeared to be approximately 10^{11} molecules of the quaternary per bacterium. There is no doubt that the protein and peptone components of the test medium, the level of contamination, and the type of inactivating procedure all influence the results obtained.

Due to its cationic and surface-active properties, benzalkonium chloride is avidly adsorbed on glass surfaces, particularly at roughened sites and on cotton, protein, and other negatively charged molecules[35]. A number of pseudomonal infections have been reported recently in hospitals and doctors' offices in various parts of the country. They were traced in many instances to contaminated ophthalmic solutions containing benzalkonium chloride as a preservative. The specific cause of its failure in each case is unknown, but it may have been related to physical inactivation or to the resistance of the contaminating microorganisms. In any event, the use of ophthalmic solutions containing benzalkonium chloride should be restricted to eyes with intact corneal membranes.

Unfortunately, benzalkonium chloride possesses certain incompatibilities which can further limit its range of application. It cannot be used (a) with nitrates, such as pilocarpine nitrate; (b) with salicylates, such as eserine salicylate; or (c) with other large anions, e.g., fluorescein or the sulfonamides. So far as (a) and (b) are concerned, one may substitute a pharmacologically equivalent salt containing a different anionic group, such as pilocarpine hydrochloride or eserine sulfate.

With all its limitations, benzalkonium chloride is among the most effective and rapidly acting preservatives when the conditions of its use are properly controlled. Further studies will be necessary to define accurately its sterilizing potential, however, particularly on the Gram-negative pathogens.

Chlorobutanol, U.S.P.

Chlorobutanol enjoys a certain degree of popularity as a preservative of ophthalmic solutions. While the antibacterial test data are very limited, it is apparent that the compound is a relatively slowly acting bactericide against both Gram-negative and Gram-positive organisms. Gershenfeld[25] reported that concentrations above 0.25% were bacteriostatic to *E. Coli*, *Staph. aureus*, and a number of Gram-negative bacilli. Lawrence[34] reported that at 0.5% chlorobutanol was slowly bactericidal to certain strains of *Pseudomonas* and *Proteus*.

Chlorobutanol is very slowly soluble in water so that heat is usually applied to hasten the process. Klein and coworkers[36] found that heat destroyed the antibacterial activity of the compound against Pseudomonas test strains, while solutions prepared without heat were active. Gershenfeld[25] reported that autoclaving a solution of chlorobutanol destroyed all its antibacterial activity against the strains tested. The loss of activity is probably related to the hydrolysis of the compound, in the course of which hydrochloric acid is released. The pH of the heated or autoclaved solution frequently falls to approximately 2.0. In addition to its susceptibility to thermal decomposition chlorobutanol is also rapidly decomposed in alkaline solutions.

Since chlorobutanol cannot be safely autoclaved, stock vehicles containing it must be subjected to bacterial filtration or cold sterilization. ■

To be continued

[32] Riegelman, S., Vaughan, D. C., and Okumoto, M., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 93 (1956).

[33] Lawrence, C. A., *Am. J. Ophthalmol.*, **39**, 385 (1955).

[34] Lawrence, C. A., *J. Am. Pharm. Assoc., Sci. Ed.*, **44**, 457(1955).

[35] Lawrence, C. A., "Surface Active Quaternary Germicides," New York, Academic Press, 1950.

[36] Klein, M., Millwood, E. G., Walther, W. W., *J. Pharm. and Pharmacol.*, **6**, 725(1954).

manpower

studies indicate a threefold increase in the pharmacist shortage in one year

In THIS JOURNAL, **18,** 33 (1957) it was pointed out by Dr. Stephen Wilson, as Chairman of the APhA Committee on Economic and Social Relations, that:

1. During the period 1955 to 1960 the number of people in the United States in the age group 20 through 24 is 3% less than it was in 1940. This accounted for the drop in graduates from Colleges of Pharmacy and for the difficulties which recruitment programs have encountered.
2. Larger numbers of people will be available in both college entrance and college graduation age groups in the future. But recruitment programs will be necessary if Pharmacy is to get its proportionate share of these larger numbers.
3. The increase in population by age groups resulted in a V-shaped curve (see page 33 in the January 1957 issue of THIS JOURNAL), and 49% of the population of the United States was either under 20 or over 64 years of age, thus leaving 51% of the populations in the labor force.
4. The ratio of the number of pharmacists to the total population of the United States has on a number of occasions returned to 0.067% (1 pharmacist per 1,500 U.S. residents).

The current Committee, consisting of Joseph S. Begando, Paul C. Olsen, Irving Rubin, John L. Voigt, and Stephen Wilson, Chairman, reports the following:

By comparing the bar graph in Fig. 1 showing the increase in population by age groups from 1940 to 1960 with the other similar graphs showing the increase from 1940 to 1965, from 1940 to 1970, and from 1940 to 1975, we note that the "V" shape remains consistently through 1975. As a matter of fact, the percentage of the population in the labor force only changes from 51% to 52% through 1975. This continued shortage in the labor force means active continuation of recruitment programs in virtually all fields, and makes it more mandatory than ever that Pharmacy have an actively stepped up recruitment program in operation as soon as possible. If this is not done, Pharmacy will not get its needed share of the increased numbers available.

Figure 1 also shows that by 1975 the shortage will be in the 40- to 50-year age group. If our recruitment programs have been successful, this should be an ideal time to complete the adjustments mentioned in last year's report in salaries and other rewards, to establish more satisfactory long-term incentives for lifetime careers in Pharmacy for employee pharmacists.

The number of pharmacists needed in the United States from 1940 through 1975 on the basis of the population factor 0.067% is not necessarily the ideal number. This is a frame of reference from which to measure changes in the number of pharmacists only in relation to the population. For example, if the number of prescriptions filled in the United States should triple by 1975, it may be that the figure of 149,000 indicated on the basis of projected population will be very conservative. On the other hand, the number of prescriptions filled in the United States did triple from 1940 to 1955 without having any undue effect upon the number of pharmacists needed in relation to the population.

The number of pharmacists actually in practice in the United States from 1942 to 1957 was kept fairly constant during the war and rose rapidly after the war with the return of pharmacists from the Armed Services and with increased numbers graduating from Colleges of Pharmacy so that in 1950 the number of pharmacists actually in practice coincided with the number needed in relation to the population. That is to say, in 1950 we had 100,000 pharmacists and 150,000,000 people in the United States. This is in line with the ratio 0.067%. On the other hand, in the report last year it was indicated that in 1955 we had 110,000 pharmacists as compared with 165,000,000 population and that this was again a point where the ratio was 0.067%. Please note, however, that this is only true in the sense that round numbers were used. Actually, the population was a little over 165,000,000 and actually the number of pharmacists was less than 110,000 so that the two lines on this chart do not quite coincide in 1955. After 1950, with the advent of the Korean incident, a slight shortage developed which continued through 1956. This shortage was significant enough to cause considerable confusion. Many pharmacists sincerely believed that the shortage was greater than it was; other pharmacists believed that there was no shortage at all.

In connection with the shortage of pharmacists beginning in 1950 and extending to 1956, an historical reference would appear to be in order. In the late 1930's —after the depression and before World War II—the leaders of American Pharmacy were advocating a policy that "a planned shortage of pharmacists was much more to be desired than an unmanageable surplus." This policy grew out of the vast unemployment during the depression and was basically sound. It was impossible to put it into effect, however, during the hectic war and postwar era, and hence it was forgotten. It would appear, however, that the shortage which did develop from 1950 to 1956 was about as much in line with this policy as if it had been planned.

The important point, however, is the direction which the number of pharmacists in actual practice has taken from 1956 to 1957. The shortage of pharmacists has increased at least threefold and possibly fourfold in a single year. If this trend is not changed promptly, the situation can easily become as serious as during World War II when Pharmacy had to be listed as a critical manpower shortage area. While this could happen during a war, it should not be permitted to happen now.

The number of graduates from the Colleges of Pharmacy dipped from approximately 1,000 graduates in 1937 down to less than half that number in 1945, rose to a peak of over 5,000 in 1951, and then declined again to 1956. There is a slight increase indicated in 1957, and from there the estimated numbers go down each year to 1961. On the basis of this chart, it would appear that a recruitment program is urgently needed and that unless it is carried on assiduously at the junior college level as well as at the high school level there can be no improvement in the situation before 1961. As a matter of fact, the indications are all in the direction that, bad as the situation is now, it will get worse before it gets better.

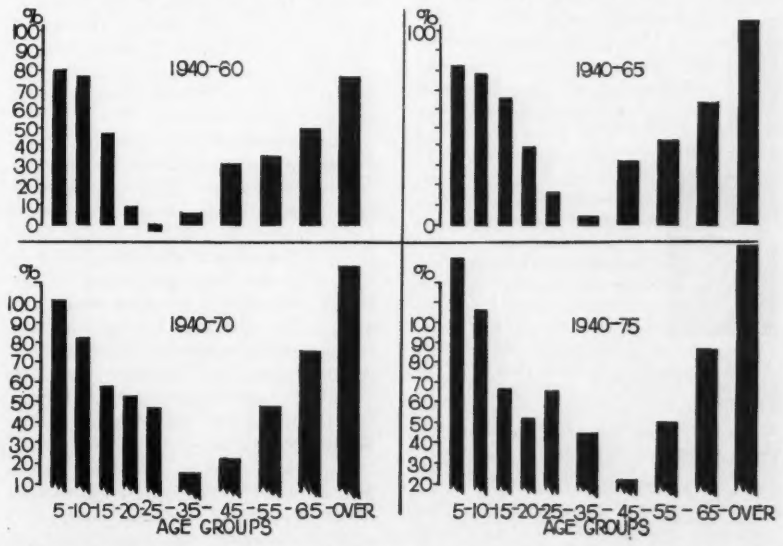


Fig. 1—Bar graphs showing population change by age groups. An actual decrease in the 20–24 age group appears over the years 1940–60 in spite of a rapidly-increasing population.

leases

in today's pharmacies

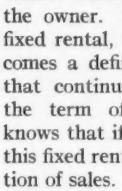
by | Paul C. Olsen, Ph.D.*

LEASES commonly in use in pharmacies are of 6 basic types. Of these, the leases which provide for a fixed rental throughout the term of the lease are by far the most common.

Fixed Rentals

The popularity of the fixed rental with both tenants and landlords is easy to understand. The establishment and operation of a pharmacy is a venture that requires the assumption of an extensive variety of risks on the part of the owner. When he contracts for a fixed rental, that particular charge becomes a definitely measurable amount that continues unchanged throughout the term of the lease. The owner knows that if sales exceed expectations, this fixed rental will take a reduced portion of sales.

Similarly, if sales are not as much as anticipated, the proprietor knows he must put forth a special effort to get them up to a level that will stop the rental charge from taking a ruinously high part of the sales. Landlords, too, often welcome the assurance of a set amount of rental income over a period of years. They know that whether the success of the tenant is fabulous or only modest, their income will remain steady.



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* Presented to the Section on Pharmaceutical Economics, APhA New York Convention, May 1, 1957.

Graduated Rentals

Leases providing for a fixed rental with a graduated scale of charges over the term of the lease are still frequently to be found in New York and other metropolitan areas.

The graduations in these leases are invariably upward, as might be expected. There seem to be two important bases for this rent-boosting device. One is an optimism among landlords and eager tenants about continued growth in the size of the retail trade of this country and—more particularly—the retail pharmacy part of it.

The other reason for the existence of leases containing a graduated scale of rents is the expectation by the property owner and probably also by the tenant that the venture will be a steadily increasing success. Thus, as the years go by the tenant will be financially able to pay a higher rent.

The depression years of the 1930's brought a great increase in the use of a third type of lease. These are percentage leases. Even such a relatively stable branch of retailing as the drug trade experienced a shattering series of upsets in the great depression of the 1930's. Sales in pharmacies, which had mounted to approximately $1,600,000,000, according to the retail census that year, plunged precipitately until, in 1933, the total was revealed in a census for that year to have been barely $1,000,000,000.

The Lilly Digest for 1932 had shown that 1 out of 3 of the retail pharmacies surveyed operated at a loss. That is, the earnings left after out-of-pocket expenses had been paid were not enough in 1 out of 3 pharmacies to pay their owners a salary for services equal to the prevailing rate. The prevailing rate, incidentally, was between $25 and $40 a week. In 1933, the number of pharmacies operating at a loss was still 27% of the total, according to *The Lilly Digest* for that year.

Percentage Leases

Under these circumstances, the number of available locations exceeded the demand for them. Proprietors with expiring leases were put in an extraordinarily favorable bargaining position with their landlords. They also were beset with offers of new locations. Rent concessions were the order of the day. Recognizing these conditions, some owners demanded and obtained leases tied directly to whatever sales volume they succeeded in obtaining.

With improving general business conditions in the mid 1930's and thus an improvement generally in landlords' bargaining positions, they began to demand minimum guaranteed rentals in connection with percentage leases. Landlords thus sought to assure themselves an income which at least would be sufficient to cover real estate taxes, mortgage interest, and other fixed charges. Also, this demand was based on the belief that the need to pay this minimum would spur tenants to their best efforts to build up sales volume.

Net Leases

Net leases are a fourth type of lease to be recognized. They have had some use in the retail drug profession. Under a net lease, the tenant pays the real estate taxes and the maintenance and repair charges on the property occupied. Net leases thus are a reflection of the efforts of property owners to insulate themselves from economic change. Retail tenants willing to rent on such terms

were to be found when the demand for so-called 100% locations exceeded the available supply.

Shifts in Location

So far as retail pharmacies are concerned, the move of an ever-growing part of the population to the suburbs and even to rural areas near large cities, and the development of shopping centers to serve them have revealed locations for pharmacies that nowadays are regarded as much more desirable than spots in the most congested parts of the big cities. That, in turn, has eased the demand for these so-called 100% locations and thus the power of their owners to demand and get net leases. The result has been a drastic change in the basis for rentals for pharmacies and other retail establishments in central business districts.

What has happened in Philadelphia will serve as an example. This experience in Philadelphia has been repeated in many other cities across the country. With the 1948 and the 1954 census of retail trade of the U.S. Department of Commerce as basic sources of information, here is what took place. In the area that is defined in the census as the "Central Business District" of Philadelphia, the number of pharmacies dropped from 103 in 1948 to 95 in 1954, and the combined sales total of these fell from $11,508,000 to $11,051,000. The decrease in sales over that 6-year span thus was 4%.

For those who are familiar with Philadelphia, the "Central Business District" as defined in the census, is the area between South and Vine streets from the Delaware river to the Schuylkill river. This area takes in the principal shopping streets in the Philadelphia "Central Business District."

The figures as quoted here from census of retail trade in 1948 and again in 1954 are defiled a little because they include a few nonprescription stores that were not distinguished from pharmacies. There are not enough of these nonprescription stores to affect the validity of our comments.

The 4% decrease in sales in pharmacies in the "Central Business District" of Philadelphia occurred, please note, at a time when, according to a compilation published in *Drug Trade News*, November 19, 1956, retail pharmacy sales in the entire U.S. rose from $3,773,000,000 in 1948 to $4,930,000,000 in 1954—a gain for the country as a whole of almost 31%. Interestingly, too, the number of pharmacies—instead of falling off as was the case in the "Central Business District" of Philadelphia—rose from 50,800 in 1948 to 53,000 in 1954.

For Philadelphia outside this "Central Business District," the 1948 census showed a total of 1,234 pharmacies with sales that year of $46,267,000. By the time of the 1954 census, the number of pharmacies in this area had dropped to 1,129 but their sales were up to $61,599,000, an increase of 33%. That is, in fact, appreciably more than the nation-wide gain in such sales previously noted of 31% between 1948 and 1954.

The retail census figures provide, in addition, a measure of the growth of the retail drug profession between 1948 and 1954 in the suburban areas surrounding Philadelphia. Again, for the information of those who are acquainted with the geography of the Philadelphia metropolitan area, the outside-the-city suburban areas as defined in the census take in all of Delaware, Chester, Montgomery, and Bucks Counties in Pennsylvania and Burlington, Camden, and Gloucester Counties in New Jersey directly across the Delaware river. In these outside-the-city suburban areas, the census shows that the number of pharmacies increased from 604 in 1948 to 628 in 1954. Their combined sales were up 48% from $35,606,000 to $52,731,000. This tops by a considerable amount the nation-wide average rate of increase of 31% in that time.

One inevitable consequence of such a decline in the relative importance of "Central Business Districts" as locations for pharmacies has been to force the rents paid under most long-term leases in such locations to inordinately high figures in relation to present day sales. This is especially true for fixed rentals and even more so, of course, for fixed rentals graduated over the period of the lease.

The same thing has happened also with percentage leases which provide for a minimum guaranteed rental. A similar result has taken place also with net leases when the increase in real estate taxes and in building maintenance and repairs has boosted the amount that is paid out for the space occupied.

There is an instance which is by no means isolated or unusual in mid-town Manhattan. A long term lease signed about 15 years ago that is now about to expire provides for a rental of 8% of sales with a minimum guaranteed rent of $4,625 a month. Sales in this pharmacy in mid-town Manhattan are averaging now less than $40,000 a month. Consequently, under the terms of the minimum guarantee, the rent that is being exacted is about 12% of sales. Negotiations in progress are expected to lead to renewal of the lease on the basis of a flat rental of no more than $2,500 a month.

Even with such a rental, which would represent a reduction of nearly 1/2 from the present minimum, there would have to be intensive use of the space occupied to produce even a modest profit. The 3,000 square feet of space occupied by this pharmacy are now producing sales at a rate that is not quite $160 a year per square foot. On these sales of under $160 per square foot, the average gross margin realized is about $50. The present minimum guaranteed rental of $55,500 a year or $18.50 a square foot is thus taking more than 1/3 of the gross margin obtained. With store salaries and other store expenses taking another $35 or so out of the $50 gross margin per square foot per year, the unhappy financial predicament of the owner is evident.

An even more unhappy situation is being experienced by the owner of another pharmacy in mid-town Manhattan. He signed for 30 feet of frontage at an annual charge of $2,000 a front foot, or $60,000 a year for a place of business that is 100 feet deep, i.e., 30,000 square feet of floor space also.

Some studies we have made indicate average sales per square foot per year in individually-owned pharmacies—mostly in neighborhood and small town locations—average about $40 a year. Pharmacies in "Central Business Districts" thus have been under the necessity of exceedingly intensive use of their floor space.

As another indication of the changes that are occurring in retailing in "Central Business Districts," it may be of interest to note that 40 years ago the largest chain store company in the U.S. was the United Cigar Stores Company with over 1,500 stores. Now its successor, United-Whelan Stores Corporation, operates just 1 cigar store and that is for sale. The rest of the United-Whelan retail business is conducted in drug stores, as the reader knows. This once giant retail cigar store business has been a victim of a combination of circumstances. Among these is a shift in smoking habits until, at the end, 2/3 to 3/4 of the sales of these cigar stores were cigarettes. At prevailing gross margins on cigarettes of under 10% and often as low as 2%, one does not need to be an expert in accounting to see why these cigar stores with their characteristic 10% rentals in years gone by in busy downtown locations did not survive.

All this is mentioned because there is evidence in retail pharmacy of a willingness on the part of some pharmacists to take over and attempt to operate locations in "Central Business Districts" that have been abandoned by previous owners because of declining business and inordinately high rentals.

The chain drug store companies by the very nature of their operations pick and choose in their business lifetimes from hundreds of locations. An individual may make such a choice only once

Continued on page 544

Continued from page 543

in his career. Chain store experience with locations in "Central Business Districts" is thus one that should be heeded. The announced intention of many of the largest and most successful chain drug store companies to confine their future openings to shopping centers is not a hasty or ill-considered action. From decisions of that kind there is to be learned at least the fact that locations in "Central Business Districts" in large cities are worth going after only if they can be obtained at rentals that permit profitable operation.

It is certainly not intended to indicate here that retail locations in "Central Business Districts" are doomed. Rather it is emphasized that as compared with suburban areas and even neighborhood sections of large cities there has been no comparable growth in recent years. If this development has not done anything else, it has improved the bargaining position of tenants in locations in "Central Business Districts."

Square Foot Rentals

Just by way of contrast, in shopping center locations rentals as low as $1.50 per square foot per year are being negotiated. This is a per square foot rental that is only about $^1/_{12}$ as much as the $18.50 and $20 rates that formerly were sought and obtained in mid-town locations in Manhattan and other large cities. The $1.50-a-square-foot-shopping-center rate for retail pharmacies is about $^1/_7$ as much as the $10 per square foot for present day leases which are being signed in "Central Business District" locations. The actual difference in rentals is not as much as is indicated by a comparison of the $1.50 and the $10 per square foot rental charges. In a shopping center pharmacy or drug store, a vastly larger floor area is needed. It might be 6,000 square feet instead of the 3,000 square feet that has been mentioned for mid-town locations.

But even with 6,000 square feet, the rental charge at $1.50 a square foot per year is $9,000, as compared with $30,000 for 3,000 square feet at $10. Furthermore, if the 6,000 square feet produces annual sales at the rate of $75 a square foot, the rental charge is 2% of sales. This 2% is an average figure. If a drug store tenant enters into an arrangement in a shopping center that causes him to pay more than 3% for rent, he is cutting seriously into the amount of profit he can expect from such an operation.

By way of contrast, in the 3,000 square foot mid-town location rented at $10 a square foot a year, the sales would have to average $500 a square foot per year to result in a 2% rental. That is, of course, a fantastically high amount. It is more than 3 times the $160 actually being obtained now in the mid-town Manhattan locations cited here as illustrations.

If anyone has any doubt about the desirability of drug store tenants limiting the rent they pay to 2% to 3% of sales, let us note, first, the financial records of the chain drug store companies. There are 16 of these which make public these figures and they have a total of about 2,000 stores.

In *Drug Trade News* September 10, 1956, a compilation appeared of their comparative earnings in 1955 and 1954. The average before taxes was about 4$^1/_2$% of their sales. You can see readily enough the interest of these companies in getting out from under the 8% and the 10% rents of another day. The 2% and the 3% rents provided in their leases of recent years are not permitting profits that would allow the payment of higher rents.

The same thing is true of the independents. The latest *Lilly Digest* shows the prevailing rent to be between 2% and 2$^1/_2$%. With rents of that amount the profit on sales for the independents is averaging about 5%, after payment of a salary at the going rate to self-employed pharmacists. No elaborate figuring is needed to find out what would happen to these profits of 5% on sales before taxes if a 4% or a 5% rent were to be paid. Also, it will be seen that the payment of an 8% rent would wipe out all possibility of profit and leave the owner working for no more than he would obtain on a salary without the investment, the risks, and none of the responsibilities that go with self-employment.

Improvement Leases

This brings us to a consideration of the sixth type of lease commonly used for drug stores. It is the improvement lease. The tenant rents the ground and erects on it a building, the ownership of which reverts to the land owner at the expiration of the lease. An essential consideration in an improvement lease therefore is that it should be for a period of years sufficient to allow the full depreciation of the building before its ownership reverts to the land owner. Thus if the depreciation is to be spread over 50 years, this charge is at the rate of 2% a year.

Land value in such arrangements is usually about $^1/_4$ that of the building erected on it. The tenant customarily pays the real estate taxes on both the land and the building. In addition, of course, he takes care of the maintenance and repair costs for the building he has put up. The rental costs under an improvement lease thus are sure to be considerably more than the 2% to 3% average that now prevails for pharmacies. Consequently, tenants under improvement leases are likely to be retail establishments that can afford to pay for rent a larger part of their sales than is the case with pharmacies.

In addition, few owners lay claim to such ability as forecasters and seers as to be willing to tie themselves to one location for a period of 50 years. If the term of such a lease is less than 50 years, the amount that has to be charged each year to amortize building costs becomes inordinately high. As a matter of fact, the term of the lease which seems to be most satisfactory for drug stores is 10 years with options for renewal for additional 5-year periods.

Leases of that length enable drug store owners to keep pace with changes in the community in which they are operating. A proprietor thus is not tied to a location which has changed in character and type of patronage. He has the choice of moving to an area of the type to which he has been accustomed. Or, if he prefers, he still is able to stay where he is and adapt his business to the changed conditions. In either event, he is in full control of the situation.

Self-Tenancy

The pros and cons of self-tenancy as distinguished from renting from another property owner will not be considered.

By means of graduated rentals, minimum guarantees, net leases, and improvement leases, landlords have sought to take advantage of an increased ability to pay to force their tenants to hand over more rent. Oftentimes, this ability to pay more rent is the result of the genius and hard work of the tenant and not through any improvement in the quality or character of the premises he occupies. The rent increases are thus a penalty for his success.

In fact, in the bargaining that occurs when a lease for a pharmacy is to be renewed, the landlord's objective is to obtain a renewal at a rate which is the maximum the tenant will pay in preference to giving up entirely or moving to another location. If the owner is willing to sell the property to his tenant at an agreeable price, that is a third choice. To profit from such appreciation as occurs in the rental value of the property from the tenant's efforts, owners thus sometimes are influenced to become their own landlords.

The basis for such a decision is readily determined. To put up or buy a building for occupancy by a pharmacy, the cost limit including land value should not be more than 10 times the amount the owner would be willing to assume as

a rental charge. Thus if he is willing to pay $3,000 a year in rent, the value of the property erected or purchased should not be more than $30,000. Of this $30,000, about 20% or $6,000 would be ordinarily the land value. If the building contains additional rentable space apart from that occupied by the pharmacy, the rental value of that space also would be taken into account in determining the amount to be invested.

Of the rental value in self-tenancy, about 1/3 will go ordinarily for real estate taxes. From the rest will come building maintenance, repair costs, and insurance. If the transaction is not all cash, there also will be mortgage interest to pay. The two biggest disadvantages of self-tenancy seem to be, first, a reduction in the ease with which an owner may move his store to a location that later appears to be much more desirable. The other drawback to self-tenancy is the investment required and, of course, all the responsibilities which go with building ownership. The owner of a pharmacy usually can employ whatever capital he has to best advantage in his store.

Lease-back Plans

In various lines of trade and industry, efforts have been made to overcome this latter disadvantage by what are known as lease-back arrangements. Under the lease-back plan, the owner of a business erects or buys a building suitable for his needs. Then he gets back his investment by selling the building to an investor and renting it from the new owner on mutually agreeable terms.

This has been done, for example, with department store buildings. Charitable organizations and such nonprofit groups as colleges and universities are willing to invest their capital funds in this manner. Then rental terms on a lease-back arrangement may be especially generous because income arising from such an agreement is not subject to income tax to the extent that it is with private owners.

The relatively small amount of the investment represented by a building to be occupied by a pharmacy is not likely to lead to any widespread use of lease-back arrangements. The costs of making such an agreement would be too high in relation to the amount of principal and income involved.

As a matter of fact, out-and-out rental of premises for pharmacies is now and always has been the most popular form of occupancy. This is a condition that seems likely to continue. ■

Shall we prepay prescriptions through a

green shield plan?

A new experiment being tried out in Windsor, Ontario, is being carefully observed. This is the first voluntary prepaid prescription plan to be tried anywhere. It is sponsored by pharmacists through Prescription Services, Inc.

This non-profit service plan offers free choice of pharmacy. Benefits include prescriptions from office, home, or hospital. Dependents receive the same benefits as subscribers. There is no exclusion for pre-existing or chronic conditions. Prescribing is restricted to licensed practitioners. Compounding and dispensing are restricted to pharmacists only. A uniform pricing schedule for all prescriptions dispensed under the plan is used.

As Dr. Stephen Wilson pointed out in presenting the report of the Committee on Economic and Social Relations to the House of Delegates at the APhA Los Angeles Convention:

> The plan is available to groups of 5 or more with no medical examination, no enrollment fee, and no age limit for the subscriber or spouse. Monthly rates run from $.95 for the subscriber alone to $8.55 for a subscriber and 4 dependents. Dependents include the subscriber's wife or husband, or any unmarried child under 18 years of age, any unmarried adult relative of the subscriber, if completely dependent on the subscriber and between the ages of 18 and 60 at the time of enrollment.
>
> Benefits become available 30 days after the enrollment and acceptance by the Service and include: (1) Prescriptions written by a licensed practitioner and dispensed by a member pharmacy of the patient's choice; (2) prescriptions for in-patients in a hospital where dispensed by a member pharmacy, and (3) prenatal, post-natal, and convalescent therapeutic medicines prescribed by a practitioner. Newborn children are eligible for all benefits provided the birth is reported within the prescribed limits. Benefits are obtained by simply presenting the membership card to any member pharmacy together with $.35 for each prescription. A subscriber on vacation or traveling up to 2 months may have prescriptions filled anywhere and present itemized bills to the Service for reimbursement.
>
> Benefits under the plan do *not* include: (1) any prescriptions for which compensation is provided under the Workmen's Compensation Act or by any Government agency; (2) delivery charges made by a pharmacy member; and (3) canes, crutches, wheel chairs or conveyances, trusses, abdominal supports, diaphragms, patent medicines normally sold without prescriptions, insulin, diabetic supplies, biological sera, injectibles, blood or blood plasma, or prescriptions which require a period greater than 34 days to consume or use.
>
> A pharmacy becomes a member by agreement of the owner, or one representative owner or a partnership or corporation, with the Service. The owner lends the Service $150 without interest for a period up to 10 years, and has one vote in the corporation. An owner of more than one pharmacy lends $150 for each one to be designated as a member pharmacy, but still has only one vote. Of the 82 pharmacies in Essex County, 78 have either joined the Service or have agreed to become members. A member pharmacy in accepting prescriptions from a subscriber checks his membership identification card, collects $.35 for each prescription, delivers the medication, files a charge card for each prescription listing, along with other information, the price of the prescription as indicated by the pricing schedule. The pharmacy is then paid by the Service on a monthly basis. . .
>
> Some pharmacists have been asking why prescriptions could not be included under Blue Cross. They perhaps could. The question, however, should be whether or not they ought to be so included. The Blue Cross is identified with hospitals and is concerned with providing facilities in which the physician can work for fees. It provides room and board, the use of the operating room, and other facilities, and some ancillary services performed by X-ray and laboratory technicians. Also it is run by laymen. Pharmacy does not belong in this environment. Blue Shield on the other hand provides professional services of physicians, and is sponsored by their professional associations. This is a better arrangement, but still not the right one. To bring Pharmacy into this picture would require the inclusion of pharmacists on the governing boards and in a minority position. It is a rather foregone conclusion that neither pharmacists nor physicians would be happy, nor even comfortable in such an arrangement. Might it not be best, however, that pharmaceutical services be provided by Green Shield, a nonprofit voluntary pre-payment plan sponsored by pharmaceutical associations? For the answer to this question watch Prescription Services, Inc., of Windsor, Ontario. Our Canadian friends have furnished us with a pilot operation. Let us carefully evaluate the trial run.[1]

[1] Since the above report was written, the publication of a manual on how to plan a prepaid dental care program providing comprehensive coverage has been announced by the U.S. Public Health Service (Publication No. 750). The pamphlet, entitled "The Dental Service Corporation," is based on the experiences of the Washington State Dental Service Corporation in developing such a program. The Washington Corporation, started in 1954, was sponsored by the State Dental Association. Similar Corporations have been formed by dental societies in Oregon and Northern California.

A formula for a stable

aspirin suspension

by | *Gerhard Levy, Pharm. D., and Roderick D. Jones, Pharm. D.**

THE USE OF ASPIRIN as an analgesic, antipyretic, and antirheumatic is increasing from year to year. It was predicted[1] that some 17,000,000 pounds of aspirin would be produced in 1957, a gain of about 6,000,000 over the peak wartime demand. Much of this increasing consumption of aspirin is undoubtedly due to its use in the long-term treatment of arthritic and rheumatic conditions.

As aspirin is used so widely by the very old and the very young, both of whom may experience difficulty in swallowing solid medication, it is desirable to provide the drug in a liquid dosage form. This is reflected by the recent marketing of several "aspirin-like" liquid preparations by drug manufacturers. While the "aspirin-like" drugs such as salicylamide have undoubtedly proven their usefulness, the public as well as many physicians seem to have retained their preference for aspirin. In this paper, a formula for a palatable aspirin suspension of good stability is presented. This suspension may be prepared extemporaneously by the retail pharmacist, giving him the opportunity to provide his physician-clients and the public with a useful and desirable product.

* Received from the University of California School of Pharmacy.

[1] *Chemical and Engineering News*, **35**, Nov. 18 1957.

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Solutions vs. Suspensions

Liquid preparations of aspirin may take the form of solutions or suspensions. The drug is only slightly soluble in water; therefore, organic liquids such as alcohol, glycerin, and propylene glycol or alkaline substances such as the citrates have been used to prepare solutions of adequate concentration. Some physicians object to the use of organic solvents as vehicles for medications intended for children or for prolonged use. Furthermore, such solvents often give the preparation a burning or bitter taste.

The use of alkaline substances to increase the solubility of aspirin by forming the acetylsalicylate salt results in a preparation in which the drug is rapidly hydrolyzed. It has been shown[2] that aspirin is most stable at a pH close to 2.5 and saturated aqueous solutions of aspirin assume a pH in this region. The addition of alkaline compounds will increase the pH and this together with the greater concentration of drug in solution results in rapid hydrolysis. The salicylic acid and/or the salicylate salt which are products of this hydrolysis may cause marked gastric irritation.

Aqueous suspensions of aspirin may be formulated to contain relatively high concentrations of the drug. Thus a suspension can be prepared which provides an adult dose of aspirin in each teaspoonful. In suspension, the disagreeable taste of aspirin is less apparent, since each dose is made up of predominantly undissolved aspirin. Because the drug is finely divided, it will rapidly go into solution when it comes in contact with gastric juice. This in turn will result in fast absorption, which means rapid onset of action and less incidence of gastric upset. If aspirin is administered in tablet or capsule form, absorption may be delayed by the time required for the disintegration of these dosage forms.

[2] Edwards, T., *Trans. Faraday Soc.*, **46**, 723 (1950).

Preparation of the Suspension

We have developed an aspirin suspension consisting of a powder mixture which is constituted by the addition of water either by the pharmacist or by the patient. This has the advantage that the dry powder mixture may be stored by the pharmacist for a long time, and that the suspension can be prepared in a fast and simple manner. The preparation may also be dispensed as a powder, especially for patients going on long trips. In that case, the patient will prepare each bottle of suspension by adding water as soon as a previous bottle has been taken.

The ingredients are well mixed, preferably with the aid of a suitable sieve. The powder mixture is then placed in a dry 4-ounce bottle which is tightly closed. The suspension is prepared by adding 56 ml. of distilled water to the powder with energetic shaking. This results in 100 ml. of a pleasant-tasting, raspberry-flavored preparation of syrupy consistency, containing 300 mg. of aspirin in each 5 ml. of suspension. A suitable water-soluble, acid-stable food color may be added to the formulation. If the suspension is to be prepared by the patient, he may be instructed to add a sufficient amount of water to bring the suspension volume to the 100 ml. mark on the bottle.

The Ingredients

Aromalok raspberry imitation flavor is a spray-dried product in which the flavor is "locked" in tiny granules. This retards flavor loss by evaporation, and it also obviates the need for adding liquid flavor components to the dry mixture.

"Cellosize" hydroxyethylcellulose is a water-soluble suspending agent which aids in the dispersion of aspirin in the vehicle. Due to its nonionic nature, it will not precipitate in the acidic medium, and unlike methylcellulose it will not "gel" in the presence of a high concentration of sorbitol.[6] It is generally more stable in the presence of acids than most natural gums.[7]

[3] Aromalok (TM) Raspberry Imitation, Fritsche Brothers Inc., N.Y.

[4] "Cellosize" WP-300, Carbide and Carbon Chemicals Co., N.Y.

[5] Atlas Powder Co., Wilmington, Del.

[6] Levy, G., and Schwarz, T. W., *J. Am. Pharm. Assoc., Sci. Ed.*, **47**, 44 (1958).

[7] Carbide and Carbon Chemicals Co., *"Cellosize" Technical Information Bulletin*, September 1955.

DR. RODERICK D. JONES, a practicing pharmacist, received his B.S. degree in 1955 and the Pharm.D. degree in 1957 from the University of California. Associated with a professional pharmacy in Berkeley, Calif., Dr. Jones is also assisting in the laboratory instruction of Drug Product Formulation at the University of California, San Francisco.

Powder for Aspirin Suspension

Acetylsalicylic acid USP.	6.0 Gm
Raspberry imitation flavor[3]	1.0 Gm
Hydroxyethylcellulose[4]	1.0 Gm
D-Sorbitol, crystalline[5]	70.0 Gm
Citric acid USP	0.1 Gm
Methylparaben USP	0.12 Gm
Propylparaben USP	0.02 Gm

Methylparaben and propylparaben act as preservatives while citric acid is used as a flavoring aid and stabilizing adjunct.

D-Sorbitol is a sweet, crystalline hexahydric alcohol, prepared from glucose. It is official in the National Formulary as the 70% solution and has found wide acceptance in Pharmacy as a vehicle and sweetening agent. In dry form, it assures rapid solution of the hydroxyethylcellulose when water is added to the powder mixture. Ordinarily, the suspending agent has the tendency to form lumps unless high-shear dispersing equipment such as a Waring Blendor is used.

There have been indications that sorbitol exerts a stabilizing action on a number of drugs. The stabilizing effect of sorbitol on vitamins C and B-12 have been recently reported.[8] This was attributed to two possible causes: the reduced availability of water in the sorbitol solution or complex formation between sorbitol and the drug. We have found that sorbitol retards the hydrolysis of aspirin and, therefore, we have used it not only as a suitable vehicle but also as a stabilizing agent. It should be mentioned that sucrose has a tendency to undergo inversion at acidic pH with resultant darkening due to caramelization. Sorbitol is not subject to this process of inversion.

Stability of the Constituted Suspension

The stability of the aspirin suspension was determined by storing 6 ten-ml samples of the suspension and 6 controls, consisting of 6% w/v aspirin dispersed in distilled water, for 31 days in a constant temperature bath at 25° ± 0.5°. The samples were then analyzed spectrophotometrically for aspirin and for salicylic acid.

Assay Procedure:—Ten ml. of 95% ethanol were added to each sample in order to dissolve the suspended aspirin and salicylic acid. The solution was then placed in a 1000-ml. volumetric flask with the aid of several washings of distilled water. Sufficient water was added to make a total volume of 1000 ml. Ten ml. of this solution was mixed with 80 ml. of distilled water and 10 ml. of 1 *N* sulfuric acid. The optical density of this solution was determined at 275 mμ and 302 mμ with the Beckman Spectrophotometer, Model DU. The extinction coefficients used were those reported by Edwards.[2] The method of calculation followed that outlined by West for multicomponent systems.[9]

The amount of salicylic acid formed in the suspensions is a reflection of the degree of aspirin hydrolysis. Table I shows the amount of salicylic acid formed in the suspensions and in the aqueous controls. The average recovery in both series was slightly better than 97%.

While the average salicylic acid concentration found in the aqueous controls was 0.0431 Gm./10 ml., it was only 0.0307 Gm./10 ml. in the suspension formula. That means that the aspirin hydrolysis in the suspension was 29% less than in the aqueous controls. Expressed in terms of aspirin, 6.7% of the total amount is hydrolyzed in 31 days at a temperature of 25°. However, it must be pointed out that the hydrolysis rate in a suspension is dependent on the amount of drug in solution and not on the total drug concentration. Thus, if the aspirin concentration in the suspension were to be doubled (to 12% w/v), the extent of hydrolysis relative to the total amount of drug would be only 3.35%.

Table I.—Salicylic Acid Formed in 6% w/v Aspirin Suspensions after 31 Days' Storage at 25°

Suspension Sample Number	Gm./10 ml.
1	0.0286
2	0.0317
3	0.0305
4	0.0305
5	0.0317
6	0.0309
Average	0.0370
Control Sample Number	
1	0.0427
2	0.0420
3	0.0439
4	0.0431
5	0.0431
6	0.0435
Average	0.0431

When the stability of the suspension is compared to that of an aqueous aspirin solution, the difference in stability is even more striking. The solubility of aspirin in water is 2.92 Gm./100 ml. at pH 4.5 and 8.52 Gm./100 ml. at pH 5.0 at 25.6° according to recently published data.[10] Thus to make a 6% solution of aspirin in water requires adjusting the pH to about 5. In such a solution, 78% of the aspirin is hydrolyzed after only 5 days of storage. On the other hand, in the suspension described in this paper only 1% of aspirin is hydrolyzed in the same time.

Conclusion

The aspirin suspension presented here provides an adult dose of aspirin in each teaspoonful in a pleasantly flavored, easily administered dosage form. The constituted suspension may be kept at room temperature for 1 month without excessive hydrolysis. ■

[8] Gerber, C. F., *et al., J. Am. Pharm. Assoc. Sci. Ed.*, **46**, 635(1957).

[9] West, W., in "Physical Methods of Organic Chemistry," Part II, 2nd Ed., 1430, Interscience Publishers, Inc , New York (1949).

[10] Garrett, E. R., *J. Am. Pharm. Assoc., Sci. Ed.*, **46**, 584(1957).

Congressional Accomplishment

As we go to press, the 85th Congress has just adjourned. Retail pharmacists will be disappointed that no action was taken on the Federal Fair Trade Bill, the bill providing flag rank for the chiefs of medical service corps, the bill transferring retail excise taxes to manufacturers, the Keogh bill permitting self-employed to provide their own voluntary pension plan.

They will be pleased to learn that military pay increases of 6% have been provided for and that more long-term credit will be available for small businessmen.

In general, the 85th Congress has been characterized as one of better than average accomplishment. A more detailed discussion of its accomplishments will be given in the October issue of THIS JOURNAL.

U.S. Hospital Statistics

The American Hospital Association reports that 22,993,000 patients were cared for in U.S. Hospitals in 1957, a record. On any given day in 1957 an average of 1,320,000 patients and 48,775 newborn infants were hospitalized. A total of 3,739,259 babies were born in U.S. hospitals last year.

Voluntary hospitals which care for most of the acute short-term cases spent an average of $26.81 a day for the care of each patient. The average expenditure on each patient during last year was $198.39. The average patient's stay in these hospitals was 7.4 days.

While expenses of caring for patients in voluntary hospitals totaled $3,050,398,000, total income from patients in all such hospitals in 1957 was $2,878,254,000. The deficit was made up from contributions, grants, endowments, and other income.

The average expenditure per patient per day in the Federal psychiatric hospitals was $9.73. In the voluntary psychiatric hospitals the average expense was $14.88; in the proprietary psychiatric hospitals $14.70; and in the state and local government psychiatric hospitals $3.66.

Personnel employed in these hospitals range from 32 per hundred patients in non-Federal psychiatric hospitals to 218 per hundred patients in voluntary short term hospitals, with an average of 107 per hundred patients, for all hospitals.

Out of the total number of patients hospitalized on any one day, psychiatric hospitals cared for 51%.

The general hospitals and the psychiatric hospitals each had 45.5% of the total of 1,558,691 hospital beds in the continental U.S.

5 ml. should be the official equivalent of

one teaspoonful

by | *Edward Stempel, Ed.D.*

THE NEED FOR a standard teaspoon in measuring the volume of liquid medication has been recognized for many years.[1] For household purposes, an American Standard Teaspoon has been established by the American Standards Association as containing 4.93 ± 0.24 ml.;[2] however, it will take a long time before teaspoons in a good proportion of the homes in the United States will comply with the established standard of the American Standards Association.[3]

Volumes of Teaspoons

At present teaspoons with capacities ranging from 3 ml. to 7 ml.[3] may be found. A recent study conducted in Canada by Morrell and Ordway[4] provided the data that the *average* content of the samples of teaspoons tested varied in volume from 4.77 ml. to 7.11 ml.

Morrell and Ordway[5] used an arbitrary end-point, termed the "brimful," which meant that the teaspoon was filled with the liquid until it reached the outer edge of the bowl of the spoon all the way around, or, in one or two cases, where the tip of the spoon was raised above the level of the side edges, the tip was ignored and liquid was added until its surface reached the sides of the rim only. These investigators recognized that this arbitrary endpoint was not always or usually used[5] because teaspoons are not filled to the brim because of the likelihood of spilling; therefore, they arbitrarily assumed that spoons are not usually filled to more than 70% of their capacity.[6]

Inconsistent Dosage

It has also been recognized that the teaspoonful is not fully administered, particularly in preparations to children, when the flavor is not attractive to the recipient.[6]

Although the establishment of a USP volume for the capacity of a teaspoon will not have any effect on the amount actually administered unless there are "standard" spoons and individuals educated to know how to use them, the issue concerning the unequivocal establishment of the volume of the teaspoonful is not unimportant.

The issue assumes some degree of magnitude when large and possibly dangerous quantities of medication are being considered or administered.[7] The variability of a teaspoonful may not have any significance from a therapeutic or safety standpoint with a preparation like Ferrous Sulfate Syrup USP; however, variability is an important consideration when administering more potent remedies, e.g. atropine sulfate in solution. The significant variability of the volume of the teaspoonful not only influences the dose of the medicament administered, but also subsequently influences the variability between the number of doses prescribed and the number of doses administered.

In addition, candidates for licensure often face a dilemma in calculating the dosage of medication in "divide" liquid medicines.[8] This is an injustice to the already worried candidate. Where examination papers are marked by individuals, this problem can be taken into consideration; however, machine-marked examinations may penalize the knowing candidate.

Therefore, it is evident that in the U.S. inconsistent results occur in licensing examinations, in manufacturing and compounding, and in the administration of medication because the equivalent volume of the teaspoonful has not been established by the USP.

Knowing that each fluidram contains 60 minims and that the pharmacopeial equivalent[9] of 1 ml. is 16.23 minims, then 60 minims divided by 16.23 minims equals approximately 3.7 ml. The inside cover of the back of the USP XV provides that the approximate equivalent of one fluidram is 4 ml. It has generally been considered that one fluidram is equivalent to one teaspoonful; therefore, either one fluidram or one teaspoonful volume in the "signa" of a prescription is equivalent to 4 ml. However, actual measurements of a large number of commonly employed teaspoons have shown that they generally contain more than 4 ml.[4,10]

Standard Spoons

As early as 1902, the AMERICAN PHARMACEUTICAL ASSOCIATION recognized the

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[1] THIS JOURNAL, **18,** 143(1957).
[2] *The Pharmacopeia of the United States of America,* 15th Rev., Mack Publishing Company, Easton, Pa., 1955, p. 832.
[3] THIS JOURNAL, **18,** 57(1957).
[4] Morrell, C. A., and Ordway, E. M., *Drug Standards,* **22,** 219(1954).
[5] *Ibid.,* 218.
[6] *Ibid.,* 221.
[7] Jenkins, G. L., Francke, D. E., Brecht, E. A., and Sperandio, G. J., *Scoville's The Art of Compounding,* 9th Ed., The Blakiston Company, New York, 1957, p. 7.
[8] In a "divide" prescription, the indicated quantity of each ingredient is the total amount of ingredient to be used. By dividing this total amount by the number of doses, the dosage or the amount per dose is calculated.
[9] *The Pharmacopeia of the United States of America,* 15th Rev., p. 1145.
[10] Stocking, C. H., and Cataline, E. L., *Arithmetic of Pharmacy,* 8th Ed., D. Van Nostrand Company, Inc., New York, 1952, p. 85.

5 ml. capacity of the teaspoon by adopting a resolution to the effect that,

". . .the following equivalents be recommended: One teaspoonful equals 5 cc.; one dessertspoonful equals two teaspoonfuls, or 10 cc.; one tablespoonful equals three teaspoonfuls, or 15 cc."

This resolution was endorsed the following year by the American Medical Association.[7] However, the U.S. authorities have continued to connote that one teaspoonful volume is equivalent to one fluidram or 4 ml.[11]

U.S. Pharmacopeial contributors have recognized the issue and compromised by providing the pharmacopeial statement:[2]

"Agreement has not been reached with respect to a standard pharmacopeial teaspoon, . . .the teaspoon may be regarded as representing 5 ml."

In the first place, there is no such thing as a "standard pharmacopeial teaspoon" which may be purchased or referred to; therefore, the pharmacopeia connotes that there is no pharmacopeial standard for a teaspoon. Secondly, the USP statement regarding the volume represented by one teaspoonful is an advisory statement, as the word "may" indicates that the statement is not to be regarded as a mandatory regulation.[3]

The Canadian Food and Drug Divisions have recognized 5 ml. as the volume of one teaspoonful for the purpose of the calculation of dosage.[6] Why should not the USP follow the adopted resolution of the APhA of 1902, which was endorsed by the AMA in 1903? Why should not the USP unequivocally establish the teaspoonful volume as 5 ml.?

Calculation of Doses

Once the USP establishes the teaspoonful volume to be 5 ml., then the calculation of doses will probably become uniform.

In determining the total number of doses in a "divide" prescription, the total amount of the product is divided by the size of the dose,[10] e.g.

Atropine sulfate	0.012
Raspberry syrup *q.s. ad*	120
Signa: f℥i (or one teaspoonful) a.c.	

Therefore, 120 ml. divided by 5 ml. equals 24 doses, and 0.012 Gm. divided by 24 doses equals 0.0005 Gm. of atropine sulfate per dose.

One teaspoonful is usually assumed to be equal to one fluidram; however, one fluidounce will commonly yield six or seven teaspoonful doses, rarely eight.[12] In one fluidounce, there are 29.57 ml. If the USP establishes the teaspoonful volume to be 5 ml., then one fluidounce contains about 6 doses, e.g.

Atropine sulfate	0.012[13]
Raspberry syrup *q.s. ad*	f℥iv
Signa: f℥i (or one teaspoonful) a.c.	

Therefore, 6 doses per fluidounce multiplied by 4 fluidounces equals 24 doses per 4 fluidounces, and 0.012 Gm. divided by 24 doses equals 0.0005 Gm. of atropine sulfate per dose.

It has been stated recently that one fluidram is still officially recognized as the approximate equivalent of 4 ml.[3] The following statement, with which the author disagrees, was also made: This 4 ml. should be the determining factor in calculating the total volume[3] when the individual dose is f℥i and it is necessary to prepare "tales" doses. If a teaspoon is included with the dispensed prescription, and if the volume of the filled teaspoon is 5 ml., it was recommended[3] that adjustment be made in the vehicle if it does not contain an active drug the dose of which should not be increased by 25%. However, if the pharmacist knows he will include a teaspoon having a filled volume of 5 ml., it would be more advisable to "tales" on the basis of 5 ml. and not attempt adjustment. This will be understood to a greater extent after reading the following paragraph.

If the USP establishes the teaspoonful volume to be 5 ml., if all pharmaceutical manufacturers abide by the teaspoonful volume of 5 ml., and if a physician specifies in the subscription of a prescription an individual dose (hereafter referred to as the finished volume dose) of f℥i, then the pharmacist should assume (if the AMA approves this suggestion) that each fluidram of the finished volume dose connotes 5 ml. In other words, if a practitioner prescribes a finished volume dose of f℥i in the subscription of a prescription and requests 32 "tales" doses based on the assumption that a "signa" of f℥i means 4 ml., then the pharmacist should assume that each fluidram of the finished volume dose means 5 ml. and should prepare 24 instead of 32 doses, e.g.

Atropine sulfate	0.0005
Raspberry syrup *q.s. ad*	f℥i
D.t.d. no. 32	
Signa: f℥i (or one teaspoonful) a.c.	

Because it will be quite some time before standard teaspoons will be found in U.S. homes it is suggested that if the USP establish the teaspoonful volume to be 5 ml. then the pharmacists should stock a "medicinal 5 ml. U.S. teaspoon."

Conclusions

1. A "signa" containing a dose of 1 fl. dram should be considered to mean one teaspoonful.

2. The USP XVI should unequivocally establish the teaspoonful equivalent to 5 ml.

3. Each fluidounce should be considered to contain 6 doses; the pharmacist should assume that each fluidram of the finished volume dose is 5 ml. ■

[11] Powers, J. L., and Crossen, G. E., *Scoville's The Art of Compounding*, 7th Ed., The Blakiston Company, Philadelphia, Pa., 1943, p. 8.

[12] Powers, J. L., and Crossen, G. E., *ibid.*, 5th Ed., P. Blakiston's Sons and Co., Philadelphia, Pa., 1927, p. 18.

[13] Although it is generally considered inadvisable to write a prescription containing both metric and apothecary systems, this practice is still encountered.

National Day of Prayer

Proclamation

By the President of the United States of America

Our fathers trusted in God, and they were not confounded. Believing that all men are "endowed by their Creator with certain unalienable Rights," they conquered the wilderness, built homes, charted the course of free institutions, and defended their liberties against forces which threatened from within and from without.

In our time, buffeted by unprecedented changes and challenged by an aggressive denial of Divine Providence, we have continuing need of the wisdom and strength that come from God, and we shall always find our highest satisfaction in a steadfast purpose to know and to do His will.

In this spirit, the Congress, by a joint resolution approved April 17, 1952 (66 Stat. 64), has provided "That the President shall set aside and proclaim a suitable day each year, other than a Sunday, as a National Day of Prayer, on which the people of the United States may turn to God in prayer and meditation at churches, in groups, and as individuals."

It is a privilege to carry out this resolution, and I accordingly set aside Wednesday, the first day of October 1958, as a National Day of Prayer; and I call upon my fellow Americans and all who may be visitors in our country, each according to his own faith, to join in prayer for our Nation and for all mankind, and especially:

First, that we may be humbly mindful that this Nation, under God, arrived at its present position by the toil and sacrifice of many citizens who subordinated personal interests to the common welfare and passed on to us a heritage with which we are singularly blessed;

Second, that we may have Divine guidance in our efforts to lead our children in the paths of truth and to provide a healthy environment in which they may grow in body, mind, and spirit;

Third, that we may ever exercise a compassionate concern for human suffering, whether at home or in distant lands, and that we may strive to alleviate hunger, eradicate disease, and advance the well-being of our neighbors;

Fourth, that we may be saved from blinding pride and from any act hurtful to the concord of free nations joined in building a just and durable peace under the guiding hand of Almighty God;

And, finally, that we may have courage to move forward in the unconquerable spirit of a free people, strong in faith, having a will to endure the burdens which have been given us to carry in our day, and to work towards goals of human betterment which may be attained only beyond our span of years.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

division of Hospital Pharmacy

Policy Committee Meeting

The Policy Committee of the Division of Hospital Pharmacy of the AMERICAN PHARMACEUTICAL ASSOCIATION and the American Society of Hospital Pharmacists met in Chicago on August 19 to consider matters of vital importance to the future of the Division.

The American Society of Hospital Pharmacists was represented by Robert Bogash, its President, Dr. Don E. Francke, Leo Godley, and Milton Skolaut. The AMERICAN PHARMACEUTICAL ASSOCIATION was represented by Dr. Geroge F. Archambault and Dr. Robert P. Fischelis, Chairman of the Committee. The Catholic Hospital Association was represented by Sister M. Stephanina. The American Hospital Association was represented by Dr. Robert Cadmus. Paul Parker, Director of the APhA. Division of Hospital Pharmacy, and Joseph Oddis, Pharmacy Director of the American Hospital Association, were present by invitation.

Hospital Formulary Service

Among the subjects considered by the Committee was the hospital formulary service of the ASHP which is ready to be launched in September. The Committee received reports from the director of the formulary project, Dr. William Heller, and Dr. Don E. Francke, and approved the hospital formulary service which is to be provided by the American Society of Hospital Pharmacists. The Committee also recommended approval of the project by the AMERICAN PHARMACEUTICAL ASSOCIATION.

In essence, this project is designed to supply monographs of drugs and preparations used by the medical profession from which individual hospitals may construct their respective hospital formularies. Full information regarding the hospital formulary service can be obtained by writing to the Division of Hospital Pharmacy, American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Internship Accreditation Program

Another important topic discussed by the Policy Committee at great length was the internship accreditation program. The Chairman reported to the Committee that contacts have been made with the Joint Commission on Accreditation of Hospitals regarding procedure and timing of visitations to hospitals for the purpose of evaluating internship programs. The relation of the hospital pharmacy internship to the practical experience requirement under state pharmacy laws has also been explored, and the relation of the extended program of pharmaceutical education to the hospital pharmacy internship program has received careful attention.

Procedure details to be developed in the evaluation of hospital pharmacy internships were discussed and methods of comparing the findings of inspectors with the standards, for the purpose of rating, as well as the preparation of reports and recommendations, were carefully reviewed.

Audit of Pharmaceutical Service

Another topic which occupied considerable time of the Committee was the report on the Audit of Pharmaceutical Service in Hospitals now being conducted under the direction of Dr. Don E. Francke. He brought the Committee up to date on the present status of the analysis of data which had been collected from a large number of hospitals with regard to their pharmacy service, and it was the consensus of the Committee that as soon as these data have been classified the interpretation of the findings should be undertaken by a number of competent groups who are expert in their respective fields of activity.

It was felt that the findings and interpretations could very well lead to a most valuable list of recommendations which would be beneficial to hospitals and hospital pharmacies in many ways. It was left to the Chairman of the Policy Committee and the Director of the Audit to work out plans for utilizing the survey data to the best advantage.

AHA Dedicates New Building

The new headquarters building of the American Hospital Association was dedicated on August 18 in dramatic ceremonies conducted at the Arena of the Chicago Amphitheatre where the annual meeting of the American Hospital Association was in progress, and at the site of the new building on Chicago's Lake Shore Drive.

More than 2,500 persons gathered in the Arena to watch immediate Past President Albert W. Snoke preside in the Arena and then turn the program over to President Tol Terrell at the building site. The site portion of the program was brought to the Arena by special closed-circuit television hookup and was flashed on a large screen.

The dedication speaker was George Bugbee, former Executive Director of the Association and now President of the Health Information Foundation.

Dr. Snoke called the building "a testimonial to the efforts of many people and many hospitals."

President Terrell read a message from President Eisenhower congratulating those who had been active in the program of providing the new building. Mr. Bugbee, the principal speaker, said that "this building grew because of the determination of the hospital people of this country that they would do everything possible to increase the effectiveness of care to the sick." The building is scheduled for completion on Dec. 1.

Ray M. Amberg, the incoming President of the American Hospital Association, is Director of the University of Minnesota Hospital at Minneapolis, and is a former pharmacist.

The House of Delegates of the AHA took a strong stand in favor of an independent joint commission on accreditation of hospital schools of nursing to replace the present system conducted by the National League for Nursing. The joint commission will include representatives of the American Medical Association and the National League for Nursing.

Hospital Pharmacy Program

Problems confronting the hospital pharmacy were discussed at a conference held during the convention of the American Hospital Association at Chicago on August 19, under the chairmanship of Dr. Robert R. Cadmus, Director of the North Carolina Memorial Hospital.

Dr. George F. Archambault, chief of the pharmacy branch, Division of Hospitals, U.S. Public Health Service, outlined the legislative tangle involving the use of alcohol and spirituous liquors in hospitals. Tax stamps that must be purchased under present laws add materially to the national cost of providing hospital care, Dr. Archambault said.

Dr. Archambault said he believed a remedy for these problems would be found if a joint statement of the facts were prepared by the American Hospital Association and the AMERICAN PHARMACEUTICAL ASSOCIATION and these facts were brought to the attention of federal authorities.

Panelist Jonn J. Zugich, Assistant Director of University Hospital, University of Michigan, Ann Arbor, in discussing the problems of handling investigational drugs in hospitals, said these drugs are carefully screened and tested in laboratories and by the government. "The weakest link is in the hospital itself where the drugs are administered to the patient," he said.

Don E. Francke, chief pharmacist at University Hospital, in discussing narcotic regulations, said the administrative head of a hospital "bears full and direct responsibility for handling narcotics in the hospital even though the work is actually performed by others."

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4. **Saturation Advertising that reaches *every one* of your customers through Television, Radio, Magazines, Sunday Supplements and Daily Newspapers is pushing Bayer sales up to new all-time highs. Tieing your store to successful advertising like this always pays off *big!***

The Lilly Digest reports record 1957 incomes for pharmacies and

RECORD Rx SALES

Prescriptions

An average of 13,502 prescriptions was filled per pharmacy reporting, with income averaging $38,477, or 30.9% of total sales, according to the 1957 *Lilly Digest* study of 1,862 pharmacies. These establishments recorded handling an average of 37 prescriptions daily at an average price of $2.85.

Especially significant is the fact that the pharmacies had a 22.4% increase in prescription sales, while other sales increased only 14.4%. Dollarwise, 1957's prescription income increase over 1956 totaled $7,047. The average number of prescriptions filled per pharmacy rose 1,517, and the average prescription price increased $.23—from $2.62 to $2.85. Consequently, the increase in the number of prescriptions accounted for $3,945 and the average prescription price increase accounted for $3,102 of prescription income gain (see Table I).

A total of 25,140,724 prescriptions was involved in the study.

Prescription Inventory Control

Normally, the increase in prescription business would be accompanied by an increase in merchandise stock inventory since a wider selection of merchandise usually is required to handle an appreciable sales gain. However, proprietors again proved their resourcefulness in inventory control and reported a 16.7% increase in prescription department inventory against a rise in prescription sales of 22.4%.

On the other hand, the report showed a percentage increase in total inventory greater than the percentage increase in sales even though there was a continued decline in the proportion of prescription inventory to prescription sales.

Prescription Volume

Approximately 84% of the 1,862 pharmacies filled between 10 and 80 prescriptions daily, indicating the gains in prescription volume were widespread. They accounted for 77.5% of the total prescription volume. Gains in proportion of prescription volume to total sales also were widespread. This is because an increasing number of pharmacies have placed special emphasis in recent years on professional service.

Volume was also given a shot in the arm in the last quarter of 1957 due to the greater number of prescriptions written to treat influenza patients and people suffering from other respiratory infections.

The survey revealed that fluctuations in seasonal and month-to-month prescription-filling have diminished greatly. Historically, June and July represent the low tide in prescription demand. However, the decline for these months in 1957 was not as great as in previous years. This signifies the importance of building prescription business to

Table I—12-Year Comparison Average Sales, Prescription Volume, and Prescription and Other Merchandise Stocks: 1946–1957

Year	Average Prescription Volume per Store	Average of Other Sales per Store	Average Total Sales per Store	Average Number of Prescriptions per Store	Average Price per Prescription	Average Prescription Stock per Store	Average of Other Merchandise Stock per Store	Average Total Merchandise Stock per Store
1946	$10,299	$55,037	$ 65,336	7,754	$1.33	$2,527	$ 7,381	$ 9,908
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1947	$12,271	$61,755	$ 74,026	8,726	$1.41	$2,726	$ 9,336	$12,062
	119.1%	112.2%	113.3%	112.5%	106.0%	107.9%	126.5%	121.7%
1948	$14,745	$63,881	$ 78,626	9,742	$1.51	$3,266	$ 9,857	$13,123
	143.2%	116.1%	120.3%	125.6%	113.5%	129.2%	133.5%	132.4%
1949	$14,806	$63,007	$ 77,813	9,258	$1.60	$3,489	$11,344	$14,833
	143.8%	114.5%	119.1%	119.4%	120.3%	138.1%	153.7%	149.7%
1950	$15,987	$62,203	$ 78,190	9,020	$1.77	$3,844	$10,907	$14,751
	155.2%	113.0%	119.7%	116.3%	133.0%	152.1%	147.8%	148.9%
1951	$18,617	$66,852	$ 85,469	9,875	$1.90	$3,995	$10,810	$14,805
	180.8%	121.5%	130.8%	127.4%	142.9%	158.1%	146.5%	149.4%
1952	$21,735	$69,799	$ 91,534	10,436	$2.08	$4,412	$11,149	$15,561
	211.0%	126.8%	140.1%	134.6%	156.4%	174.6%	151.0%	157.1%
1953	$22,546	$70,511	$ 93,057	10,295	$2.19	$4,774	$11,188	$15,962
	218.9%	128.1%	142.4%	132.8%	164.7%	188.9%	151.6%	161.1%
1954	$25,054	$75,732	$100,786	11,037	$2.27	$5,105	$12,104	$17,209
	243.3%	137.6%	154.3%	142.3%	170.7%	202.0%	164.0%	173.7%
1955	$27,688	$73,905	$101,593	11,273	$2.46	$5,576	$11,467	$17,043
	268.8%	134.3%	155.5%	145.4%	185.0%	220.7%	155.4%	172.0%
1956	$31,430	$75,268	$106,698	11,985	$2.62	$5,908	$12,643	$18,551
	305.2%	136.8%	163.3%	154.6%	197.0%	233.8%	171.3%	187.2%
1957	$38,477	$86,107	$124,584	13,502	$2.85	$6,894	$13,712	$20,606
	373.6%	156.5%	190.7%	$174.1%	$214.3%	272.8%	185.8%	208.0%

Table taken from *Lilly Digest* for 1957.

promote prescription department services every month of the year.

Growth in Prescription Refills

Prescription business increases in 1957 were assisted by the handling of a record percentage of 45.7% of the total number of prescriptions filled. This compares with the previous high percentage of 44.5% in 1956. The importance of prescription refills is enhanced by recent medical advances, particularly in the expanding field of geriatrics and in the treatment of chronic diseases.

Other Highs Recorded

Average sales, gross margin, proprietor's salary, and net profit also reached new peaks in 1957, reported the *Lilly Digest* in a general survey of 2,142 retail pharmacies. Average sales were $126,466, compared to $111,445 in 1956, an increase of 12.3%. Gross margin was $43,810 in 1957; $38,560 in 1956. Proprietor's or manager's salary reached $9,739, compared to $8,470 in 1956. Net profit was $7,029 in 1957; $6,464 in 1956 (see Table II).

Expenses Higher

As a percentage of sales, proprietor's salary, employees' wages, and miscellaneous operating costs again moved upward to produce a new peak for total expenses. The result was a decline in net profit percentage to 5.5% of total sales, down from 5.8% in 1956.

Total expenses in 1957 soared to 29.1% of sales; in 1956, they were 28.8%. These expenses are tabulated under the headings: *Proprietor's or Manager's Salary, Employees' Wages, Rent, and Other Expenses.* Employees' wages increased to 11.2% in 1957 from 11.0% in 1956. Rent, however, decreased from 2.3% in 1956 to 2.2% in 1957.

Pacific States Again Lead Nation in Sales

For the third consecutive year, Pacific and Mountain states had the highest average sales volume among the nine geographical sections of the country. The range of sales averages was from $104,918 in the West North Central States to $152,764 among coastal states of the West, a difference of 45.6%. Top gross margin of 37.5% of sales was reported by pharmacies in the East South Central States. These establishments also had the highest percentage of prescription income to total sales, which undoubtedly was largely responsible for the more favorable average for gross margin.

Table II—The Record: 1946–1957 Average Costs, Margins and Profits of All Retail Pharmacies Reporting

Year	Sales	Cost of Goods Sold	Gross Margin	Proprietor's or Manager's Salary	Employees' Wages	Rent	Other Expenses	Total Expenses	Net Profit	Value at Cost of Merchandise Stock
1946	$ 69,422	$46,995	$22,427	$4,590	$ 6,270	$1,950	$ 3,666	$16,476	$5,951	$10,487
1947	76,520	51,812	24,708	5,200	7,360	2,070	4,716	19,436	5,362	12,257
1948	86,059	58,043	28,016	5,910	8,720	2,150	5,835	22,615	5,401	13,779
1949	83,641	56,522	27,119	6,320	8,724	2,175	4,921	22,190	4,929	14,178
1950	83,540	56,142	27,398	6,492	9,018	2,220	4,995	22,725	4,673	14,808
1951	89,756	60,534	29,222	7,136	9,920	2,223	4,726	24,005	5,217	15,227
1952	95,985	64,081	31,904	6,734	10,177	2,090	7,209	26,210	5,694	15,796
1953	97,090	64,870	32,220	7,540	10,153	2,291	6,951	26,935	5,285	16,764
1954	101,881	67,735	34,146	8,116	10,237	2,273	8,327	28,953	5,193	17,406
1955	102,842	68,044	34,798	7,790	11,058	2,264	7,943	29,055	5,743	17,162
1956	111,445	72,885	38,560	8,470	12,259	2,563	8,804	32,096	6,464	17,975
1957	126,466	82,656	43,810	9,739	14,149	2,827	10,066	36,781	7,029	21,257

Table from *Lilly Digest* for 1957.

12% of Pharmacies Operate at Loss

Similar to 1956, 12% of the 2,142 pharmacies surveyed in 1957 operated in the red. Some 15% had net profit of less than 2% of sales; 24% had net profit of 2% to 4.9% of sales; 16% had net profit of 5% to 7.4% of sales; 12% had net profit of 7.5% to 9.9% of sales; 8% reported net profit of 10% to 12.4% of sales; and 13% had net profit of 12.5% and over of sales (see Table III).

The 1957 Story

Continued growth of retail pharmacy operations is indicated by the decreasing number of pharmacies reporting sales volume of less than $50,000 annually.

Among the 2,142 establishments surveyed, only 11% had sales under $50,000. By contrast, 35% of the pharmacies surveyed by the *Lilly Digest* a decade ago fell into this category. At the other end of the scale, 27% had sales above $150,000 in 1957, compared with only 6% during 1947.

Despite record-high statistics on operations last year, retail pharmacy, like all other business enterprises, was hit with rising costs and relatively stable margins. The record-high income was due to the record-high sales volume.

Since 1948, sales have increased $40,407, or 47%; and gross margin has risen $15,794, or 56.4%. Since operating costs have gone up $14,166, or 62.6%, there has been only a modest increase of $1,628, or 30.1%, in net profit. With an increase in proprietor's salary of $3,829, or 64.9%, total income has risen $5,457, or 48.2%.

Consequently, income as a percentage of sales has barely kept pace with other important operational advantages. Undoubtedly, constant vigilance over every phase of retail management and continued development of professional business are essential for the continuation of successful pharmacy operations.

The *Lilly Digest* is a splendid masterpiece of pharmaceutical economics. American Pharmacy again is indebted to its compilers for presenting the profession with this excellent survey.

Table III—Comparison of Net Profits Earned in 1957 in 2,142 Retail Pharmacies, by Sales Size

	Under $30,000	$30,000 to $50,000	$50,000 to $75,000	$75,000 to $100,000	$100,000 to $125,000	$125,000 to $150,000	$150,000 to $175,000	$175,000 to $200,000	$200,000 to $300,000	Over $300,000	Average
Number of Stores	*51*	*194*	*393*	*393*	*296*	*236*	*154*	*120*	*221*	*84*	*2,142*
Operating at a loss	25%	18%	12%	12%	11%	8%	8%	9%	13%	10%	12%
Net profit less than 2% of sales	6%	11%	12%	13%	16%	20%	20%	17%	16%	20%	15%
Net profit 2% to 4.9%	24%	19%	20%	23%	23%	24%	28%	26%	29%	25%	24%
Net profit 5% to 7.4%	16%	15%	13%	18%	16%	16%	14%	18%	17%	22%	16%
Net profit 7.5% to 9.9%	2%	11%	15%	11%	14%	10%	10%	12%	13%	12%	12%
Net profit 10% to 12.4%	8%	13%	12%	7%	7%	9%	10%	7%	5%	6%	8%
Net profit 12.5% and over	19%	13%	16%	16%	13%	13%	10%	11%	7%	5%	13%

Table from *Lilly Digest* for 1957.

signs and signboards *of early american pharmacies*

By | George Griffenhagen

"Men hang out their signs indicative of their respective trades; shoemakers hang out a gigantic shoe; jewelers, a monster watch; and the dentist hangs out a gold tooth. . ." Daniel Webster, April, 1851.

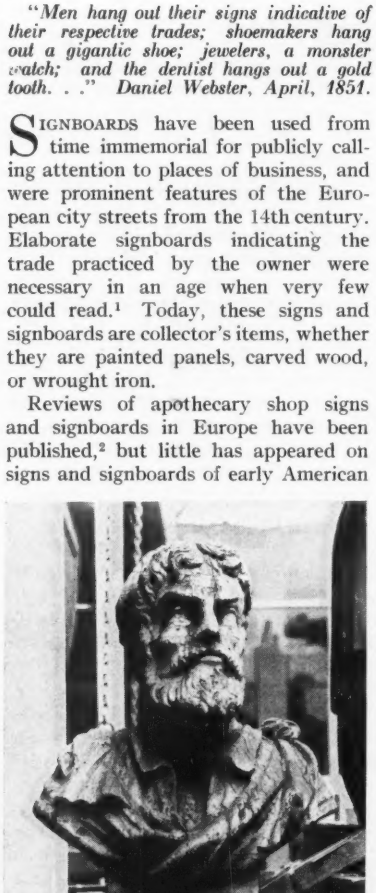
SIGNBOARDS have been used from time immemorial for publicly calling attention to places of business, and were prominent features of the European city streets from the 14th century. Elaborate signboards indicating the trade practiced by the owner were necessary in an age when very few could read.[1] Today, these signs and signboards are collector's items, whether they are painted panels, carved wood, or wrought iron.

Reviews of apothecary shop signs and signboards in Europe have been published,[2] but little has appeared on signs and signboards of early American pharmacies.[3] Here therefore are several examples of typical signs of the early American pharmacy.

[1] Larwood, J., and J. C. Hotten, *History of Signboards from the Earliest Times to the Present Day*, London, 1866; and Heal, A., *The Signboards of Old London Shops*, London, 1947.

[2] Andersen, D., *Gammelt Dansk Apoteksinventar*, Copenhagen, 1944; Cazala, R., *Les Mortiers d'Apothicaires*, Grenoble, France, 1953; Guislain, A., "Des Enseignes pharmaceutiques," *Revue de Medecine et de Pharmacie*, Brussels, No. 2, 1957; Häfliger, J. A., *Pharmazeutische Altertumskunde*, Basel, 1931; and Van der Wielen, P., "A Remarkable Variety of Pharmaceutical Signboards . . ." *The Chemist and Druggist*, London, **112**, 809–813, June 28, 1930.

[3] Individual signboards of American pharmacies illustrated in the literature include the signboard of Benedict Arnold, Druggist, Bookseller, etc., which hung from his shop in New Haven, Conn., 1764–1778 (*Journal of the American Pharmaceutical Association*, **30**, 1016, 1930); and the signboard of Chapin and Thurber of Providence, R.I., 1843–1850 (*American Journal of Pharmacy*, **103**, 571, 1931).



Forerunner of the electric neon sign for pharmacies was this jeweled, illuminated mortar of brass, copper, or galvanized iron, studded with cut glass eyes of various colors, lighted from inside by gas or oil, later by electricity. (Whitell, Tatum and McLewee, 1890's.)

18th century American apothecary shops were often designated in their advertising by signs. On the far left is a bust of Paracelsus used as a sign by the Emmerton Drugstore of Salem, Mass., about 1840 and now preserved in the Essex Institute.

Occasionally the mortar and pestle was shown in actual use. This sign was employed by a New Orleans drugstore in the mid-19th century, and is now preserved in the Cabildo, the Louisiana State Museum.

The mortar and pestle was certainly the most common sign employed by the 19th century American pharmacist. The typical mortar sign of the 1870's, cast in zinc and gilded with gold, measured from 10 to 36 inches in height. This classical example has decorated the signboard of Wm. M. Ollife's at No. 6 Bowery, New York City, for over a century.

Federal and State Actions

FDA ACTIONS

Illegal Over-the-Counter Sales for the Month of July

Joyce Love Stevens, t/a Stevens Rexall Drugs, James Michael Bryant & Howard J. Falcon, pharms., Boynton Beach, Fla.—Refilling prescriptions for barbiturates without physician's authorizations. Stevens fined $500; Falcon fined $200; Bryant fined $50.

Edward Kunitz, t/a Majorca Drug Store, Coral Gables, Fla.—Selling and refilling prescriptions for barbiturates and harmones without physicians' authorizations. Placed on probation for 1 year. (Terminated in June but not previously reported.)

Jim T. Harrison, D. O., Acworth Clinic, Acworth, Ga.—Selling amphetamine without physicians' prescriptions. Placed on probation for 2 years, during which he shall refrain from selling any drugs.

Samuel J. DeFreese, M.D., Marsha Jean Simmons DeFreese, Jean's Fine Foods, Duluth, Ga.—Selling amphetamine not in the course of professional practice (Dr. DeFreese); selling amphetamine without physicians' prescriptions (Mrs. DeFreese). Dr. DeFreese sentenced to 1 year in jail to commence at the termination of a 3-year jail sentence imposed in June 1958; Mrs. DeFreese sentenced to 1 year in jail.

Thurman C. Jones, clerk (Dial Pharmacy), Kennett, Mo.—Selling barbiturates, amphetamine, and tranquilizers without physicians' prescriptions. Fined $400 plus $35 costs.

Joki's Pharmacy, Erick Joki, pharm., ptnr. Annabelle M. Joki, ptnr., Ashtabula, Ohio—Selling prednisone, amphetamine, antibiotics, and hormones without physicians' prescriptions. Firm fined $100 which was suspended; Erick Joki placed on probation for 1 year; Annabelle Joki placed on probation for 6 months. (Terminated in June but not previously reported.)

Injunctions

Dinshah P. Ghadiali, pres., Visible Spectrum Research Institute, Malaga, N.J.—Permanently enjoined from interstate shipment of the visible spectrum color projector (also known as Spectro-Chrome) device and from promoting it with false and misleading statements for the treatment of physical ailments and disorders.

Delmar Pharmacal Corp., Rensselaer, N.Y.—Permanently enjoined from shipping adulterated or misbranded drugs in interstate commerce and ordered to adopt practices essential to the compounding of potent drugs before future shipments may be made.

Over-the-Counter Drugs for Minor Sore Throats; Suggested Warning

The Food and Drug Administration has studied the problem of the labeling of lozenges or troches containing antibiotics and a local anesthetic chewing gum containing aspirin, various mouth washes and gargles, and other articles sold over the counter for the relief of minor irritations of the mouth or throat. It will not object to the labeling of suitable articles of this type "For the temporary relief of minor sore throats," provided this is immediately followed in the labeling with a warning statement in prominent type essentially as follows: "Warning—Do not use in the presence of fever, headache, nausea, or vomiting. These usually indicate a severe infection. Do not use more than 2 days unless directed by physician. If irritation persists or increases, discontinue use and consult physician. Do not administer to children under 6 years of age unless directed by a physician."

Shampoo Preparations Containing Egg as One of the Ingredients

The present views of the Food and Drug Administration concerning the status of shampoo preparations containing egg are as follows:

a. An article designated as "egg shampoo" should contain one egg (or the equivalent amount of dried whole egg) in that quantity of the article which would be used in one shampooing.

b. An article that contains less than one egg per "shampoo" should not be referred to as an "egg shampoo" and the word "egg" should not be used as part of the name of the article. At the present time, the Administration is not raising objection to the marketing of an article containing less than one egg per "shampoo" provided the word "egg" does not appear in the name of the article, the reference to the egg ingredient such as "plus egg" appears in a subordinate position on the label and is in type which is substantially reduced in size in comparison with the title of the article, and the reference to the presence of egg reveals the amount of the egg ingredient.

c. In the case of an article containing less than 2 per cent egg, the amount of egg is so small as to be insignificant, and it is therefore considered that it would be misleading for the labeling to make any mention of the presence of egg in such a product. [*Fed. Reg.* **23,** 5380(July 16, 1958)]

Communicable Diseases Summary

THE number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Alaska, Hawaii, and Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 4 weeks are reported and also cumulative totals to date for 1958 and for the corresponding period of 1957, as well as the 1953–1957 median for this same period. The approximate seasonal low point for each of the diseases is shown in the last column.

Communicable Disease *Selected Notifiable Disease*	Cases Reported for Week Ending *July 19, 1958*	*July 26, 1958*	*Aug. 2, 1958*	*Aug. 9, 1958*	Cumulative Number *First 32 weeks 1958*	*1957*	*Median 1953–57*	Low Point (*Approximate Seasonal*)
Anthrax	1[a]	1[c]	–	–	7[g]	14	20	[k]
Botulism	–	1[d]	–	–	3[i]	7	6	[k]
Brucellosis	14	21	15	19	504	620	810	[k]
Diphtheria	14	1	7	9	398	554	918	July 1
Encephalitis, Infectious	38	60	53	52	1,057	982	975	June 1
Hepatitis, Infectious and serum	225	228	249	269	9,840	10,320	20,585	Sept. 1
Malaria	2	–	2	3	42	78	261	[k]
Measles	7,956	5,565	4,157	3,192	704,543	445,940	522,479	Sept. 1
Meningococcal infections	42	43	40	44	1,661	1,585	2,457	Sept. 1
Meningitis, other	73[b]	146[e]	96[f]	92[j]	1,758[j]	1,325	– – –	– – –
Poliomyelitis	125	143	161	201	1,408[g]	2,898	8,081	Apr. 1
Paralytic	52	72	69	90	689	974	– – –	Apr. 1
Nonparalytic	50	48	66	85	512	1,473	– – –	Apr. 1
Unspecified	23	23	26	26	207	451	– – –	Apr. 1
Psittacosis	1	5	3	3	92	181	184	[k]
Rabies in man	–	–	–	–	2	3	4	[k]
Typhoid fever	25	26	27	30	554	758	1,092	Apr. 1
Typhus fever, endemic	7	2	1	2	45	75	86	Apr. 1

[a] Reported in Miss. [b] Includes 16 cases of aseptic meningitis reported in Fla. [c] Reported in Ark. [d] Reported in Ky. [e] Includes 88 cases of aseptic meningitis: 7 were reported in the District of Columbia, 80 in Fla., and 1 in Wisc. [f] Includes 30 cases of aseptic meningitis reported in Fla. [g] Includes revised report from S.Dak. for week ended July 12. [h] Data show no pronounced seasonal change in incidence. [i] Includes revised report from Ky. for week ended July 26. [j] Includes 21 cases of aseptic meningitis: 15 were reported in Fla., 4 in Iowa; 1 in Maine and 1 in New Hamp. [k] Includes revised reports for 1 or more of the categories paralytic, nonparalytic, and unspecified poliomyelitis for the following states: Colo. and Ind. Symbols: 1 dash (–): no cases reported; 3 dashes (– – –): data not available.

Book Notices

Antibiotics Annual

1957–1958. Edited by Henry Welch, Ph.D. and Felix Marti-Ibanez, M.D. Medical Encyclopedia, Inc., New York. 1,070 pp. $12.

This volume presents the proceedings of the Fifth Annual Symposium on Antibiotics sponsored by the Division of Antibiotics of the Food and Drug Administration of the U.S. Department of Health, Education, and Welfare, in collaboration with the journals *Antibiotics and Chemotherapy* and *Antibiotic Medicine and Clinical Therapy* under the chairmanship of Henry Welch of the Division of Antibiotics.

During the 3-day session, new antibiotics and derivatives were discussed. Some of the major topics considered were: testing and assay procedures; therapeutic (antibacterial) activity; development of resistant strains of organisms; effects of antibiotics on growth and nutrition; preservation of foods; treatment of plant diseases; reactions to antibiotics; treatment of allergic reactions; antibiotic combinations; sensitivity testing; and stability.

Three panel discussions forming part of the symposium were: Rheumatic Fever Prophylaxis; Host Resistance and Chemotherapy; Antibiotics as Antitumor and Antiviral Substances.

General Biochemistry

2nd ed. By Joseph S. Fruton and Sofia Simmonds. John Wiley & Sons, Inc., New York, 1958. x + 1077 pp. 15 × 22.5 cm. Price $18.00.

This book presents a revision of the first edition which was reviewed in THIS JOURNAL, **42,** 507 (1953). The style and arrangement has been retained, and a new chapter on Alternative pathways of carbohydrate metabolism has been added. It includes many references and a good index is appended. The book is intended as a textbook that presents the structure of modern biochemistry from a general point of view, and it is well done.

Ion Exchange Resins

2nd ed. By Robert Kunin. John Wiley & Sons, Inc., New York, 1958. 15 × 23 cm. xiii + 466 pp. Price $11.

The second edition of this book is designed to serve the purpose of an introductory text and applications guide, just as was the first edition, which was reviewed in THIS JOURNAL, **40,** 219 (1951). However, many of the developments have grown to such importance during the last eight years that whole chapters are devoted to them instead of the sentence or paragraph in the first edition, e.g. permselective membranes, hydrometallurgy, sugar refining, and specific exchange resins. The alphabetical list of numbered references (referred to by number in the text) includes 1170 entries. Tabulated data, as well as author and subject indexes, are appended.

Liberal Education and American Pharmacy: A Bibliography

Institute of Higher Education, Teachers College, Columbia Univ., New York 27, N.Y., 1958. 18 pp. Free of charge in limited quantities to educators and practitioners interested in this problem.

This bibliography deals with the development of the ideal of liberal education in the preparation of pharmacists.

Current Drug Handbook 1958

By Mary W. Falconer and H. Robert Patterson. W. B. Saunders Company, Philadelphia, 1958. viii + 157 pp. 16 × 23.5 cm.

This book is a tabulation of about 1000 drugs in current use, grouped according to pharmacological or therapeutic properties. The information included is given under the column headings: names and general information (includes toxicity and treatment for poisoning), preparations, dosage, administration, and remarks on use. The difficulty in keeping such a listing current is indicated by the fact that NNR 1956 is cited as a source of material in addition to USP XV and NFX. An index of the drugs listed is appended.

Food for Fitness

Office of Information, U.S. Dept. of Agriculture, Washington 25, D.C. Colorful leaflet No. 424. Single copies free on request.

Daily food guide developed by U.S. Dept. of Agriculture nutritionists.

5-Hydroxytryptamine

Edited by G. P. Lewis. Permagon Press, New York City, 1958. 14 × 21.5 cm. xvii + 253 pp. Price $9.50.

This book is a compilation of the papers presented, and discussions of them, at a symposium on 5-hydroxytryptamine. The occurrence, metabolism, and the actions of this compound in areas affecting cardiovascular actions, nerve endings and ganglia, carcinoids, anapylaxis, and gastric secretion are covered. Peripheral antagonists of 5-hydroxytryptamine, and its central actions and antagonists to them are reported. The general discussion covers occurrence and metabolism, peripheral actions, and central actions.

Our Nuclear Adventure, Its Possibilities and Perils

By D. G. Arnott. Philosophical Library, New York, 1958. xi + 170 pp. 14 × 22 cm. Price $6.00.

This small book is a review of basic information pertaining to nuclear reactions and the related behavior of mankind with this new force.

The Atomic Age and Our Biological Future

By H. V. Brønsted. Translated by E. M. Huggard. Philosophical Library, New York, 1957. xiv + 80 pp. 12 × 18.5 cm. Price $2.75.

The aim of this pocket-size book is to describe the biological, and particularly the genetical, effects that might result unless rigorous control of atmospheric radiation is ensured.

A Dictionary of Contemporary American Usage

By Bergan Evans and Cornelia Evans, Random House, Inc., New York (Second Printing, 1957). 567 pp. $5.95.

This readable book must be studied at some length in order to appreciate its comprehensiveness and its reliability as a guide to current English. It provides clear answers to questions of grammar, word preferences, effective style, punctuation, idiomatic phrases, spelling, and numerous other problems that arise frequently in the use of the English language.

Typical of the content of this book are the following sentences, abstracted from the rather lengthy treatment under cliché:

"Cliché. . .is used in English to describe those phrases originally idioms, metaphors, proverbs, or brief quotations which overuse and sometimes changing circumstances have rendered meaningless. . .Many clichés were once original and clever but repetition by millions, possibly billions of people for hundreds and even thousands of years in some instances, has worn all originality and cleverness away. . .Their use is doubly bad because it characterizes the user as one who thinks he is witty or would like to be thought witty and yet is a mere parroter of musty echoes of long dead wit. His very attempt to sound clever shows him to be dull. . .90% of what the public reads and hears is expressed in these fossilized fragments and naturally 90% of its own expression, apart from the necessities of life is also expressed in them. This makes the task of the man who wants to speak and write clearly and honestly a difficult one."

division of

Prescription Practice

by Samuel W. Goldstein

℞ Information Service

Digitalization Dosage

A physician requested information on correct dosage for digitalization. Can you help?—J. G., Maryland.

A report of a study on "Rapid Digitalization of Ambulatory Patients" was abstracted in the Progress in Medicine section of THIS JOURNAL, **19,** 502(Aug. 1958).

A physician, B. Lown [*Modern Med.*, **26,** 35(July 15, 1958)], refers to earlier discussions of digitalis intoxication and makes the following observations: "The basic reasons for the growing incidence of digitalis intoxication relate only in part to misuse of the drug." "Drug misuse is most commonly due to reliance upon average dose formulas for achieving digitalization. Such practice invites the hazard of serious overdosage There is actually at present only one correct way to digitalize, and that involves a biologic titration of the patient's unpredictable requirements. This is accomplished by giving small increments of digitalis at established intervals. The decisive question is never the amount of drug that the patient is receiving but rather what this amount is doing. If a large dose fails to produce a therapeutic effect, there is need for more; if toxicity ensues after a small dose, there is indication for less. The core of the problem of digitalis intoxication is not, however, misuse or inadvertent overdosage but rather alterations in cardiac sensitivity while the patient is receiving a fixed dose. The narrow margin of safety between a therapeutic and toxic dose is further decreased by advancing age, loss of cardiac reserve, and depletion of potassium. Such alterations in cardiac threshold explain the occurrence of intoxication without overdosage."

Hyoscyamus Tincture, Propadrine HCl, Dimetane Elixir

The following mixture forms a black precipitate after standing for several days. We believe it is the hyoscyamus. May we have your opinion and suggestions to remedy this.—C. C. P., Alabama.

Tinct. Hyoscyamus	*3 dr.*
Propadrine HCl	*4 gr.*
Dimetane Elixir q.s.	*3 oz.*

You are correct in suspecting that the hyoscyamus tincture is responsible for the precipitate which forms in the compounded prescription. This is typical of mixtures of extracts with high alcohol content and liquids with lower alcohol content, such as the Dimetane elixir. It would require too much alcohol to keep the alcohol-soluble substances of the tincture in solution in the final product. You might (with the agreement of the physician) replace the hyoscyamus tincture with an equivalent amount of atropine sulfate or a combination of atropine, hyoscine, and hyoscyamine salts. If this prescription is to be refilled for an indefinite period of time, you could compound a fairly large amount of the preparation and filter the amount to be dispensed as needed.

Largactyl Tablets

Can you help us with a European prescription for Largactyl, 300 tablets. No dosage is indicated.—D. S. M., Ohio.

Largactyl is the Continental spelling for Largactil (May & Baker, England) which is available as 10-, 25-, and 100-mg. tablets. The generic name for the drug is chlorpromazine HCl and it is available in the U. S. as Thorazine HCl (S. K. & F.) in tablets of 10, 25, 50, 100, and 200 mg., and different strengths of Spansule capsules, etc. The oral dosage range is from 10 mg. to 1 Gm. daily. In view of the fact that the tablet strength is not indicated and in consideration of the wide range of dosage of chlorpromazine HCl depending upon the condition and the patient being treated, it would be prudent to suggest that the patient (if in the U. S.) should consult a local physician. In addition to the dosage form problem, there is the further fact that the Federal Food, Drug and Cosmetic Law recognizes as legitimate prescribers those practitioners who are licensed in the U. S. (See article by FDA's Nevis Cook, THIS JOURNAL, April 1958 issue.) If the patient is in a foreign country, and the drug is exportable, the filled prescription can be mailed to the patient by the pharmacist. He must not give it to someone else to mail.

Oral Pituitary Products

We have been unable to obtain oral anterior pituitary compressed tablets. Can you give a source?—W. H. G., Missouri.

The FDA several years ago expressed the opinion that glandular products such as anterior pituitary for oral use are inert and devoid of any therapeutic action. In a regulation which became effective December 25, 1957, it became impossible for manufacturers to supply oral dosage forms of many glandular products because it is impossible to label them as prescription legend drugs or for over-the-counter sales to users.

Polio Vaccine and Penicillin

You suggest [THIS JOURNAL, **19,** *443-(July 1958)] the use of a polio vaccine as being [practically] penicillin free. I realize this company has promoted their product as being penicillin free—however . . . . they do place penicillin in their vaccine along with streptomycin and bacitracin during the manufacturing procedure.—J. L. P., Ohio.*

It is my understanding that the polio vaccine mentioned in your item (reference above) *has penicillin added to the kidney tissue at the beginning of the manufacturing processes. The article seems to imply that there is some penicillin used somewhere.—L. L. R., Michigan.*

A spokesman for Wyeth Laboratories states: "We do not claim that our [polio] vaccine is penicillin-free. We are able to say with confidence that the final product contains less than 0.001 unit per cc. We do not use bacitracin during preparation."

In fairness to the manufacturer we reproduce the description of the procedure as given in its circular. "Poliomyelitis vaccine, Wyeth, is prepared by cultivating representative strains of the three types of poliovirus in monkey kidney tissue culture, bathed in a synthetic nutrient medium" . . . "Polymyxin B and dihydrostreptomycin sulfate are added to the final virus production medium in a concentration not to exceed 50 units and 0.1 mg. per cc. respectively. Although it is necessary to add a solution of neomycin and penicillin G to the original culture medium, subsequent washing and redilution of the medium reduces the penicillin content to less than 0.001 unit per cc. This amount of penicillin is unassayable by generally accepted methods. This figure is obtained by calculation and is based on the assumption that the penicillin or any antigenically active penicillin breakdown products or both would survive all subsequent processing. Passive transfer tests carried out in human subjects with sera capable of detecting penicillin at a level of 0.001 unit per cc. failed to detect the presence of penicillin in the final product."

Prescription Practice

Progress in Medicine

Amphotericin B in Coccidioidomycosis

Apparent cure of a patient with widespread musculoskeletal coccidioidomycosis by treatment with amphotericin B, 1 Gm. orally 4 times daily, was reported by Dr. M. S. Klapper, *et al.*, *J. Am. Med. Assoc.*, **167,** 463(1958). The lesions healed within 3 months but the drug was continued for 10 months and then a combination of 1 Gm. each amphotericin A and B was given for 6 months.

Chlorambucil Hepatotoxicity

A report by Drs. R. D. Koler and A. L. Forgren, *J. Am. Med. Assoc.*, **167,** 316(1958), states that the cited case is the first report of idiosyncrasy to chlorambucil. They comment that "Proof of hepatotoxicity in this patient is not conclusive," but rests on the time relationships of the onset of hepatotoxicity during 2 separate courses of therapy with the drug and the prompt subsidence of the condition after withdrawal of the drug.

Fats Used as Drugs

A statement by the AMA Council on Foods and Nutrition, *J. Am. Med. Assoc.*, **167,** 863(1958), refers to the marketing of products containing polyunsaturated fatty acids with or without vitamin B_6 and vitamin E, and notes: "Unfortunately, the matter does not rest simply upon the availability of these pharmaceuticals. They are being promoted by campaigns which, in some instances, are excessive by implication. In spite of the fact that present evidence does not justify widespread prescription of these items, the methods of promotion tend toward, or at least tacitly hope for, larger sales. The implication is that these products in some measure will prevent or modify atherosclerosis. As noted previously, this has by no means been proved. It should be reiterated that the advertising fliers and brochures usually do not state but only imply, albeit strongly, such a therapeutic effect."

Hydralazine and Polyneuritis

Symptoms indicating polyneuritis in 2 patients receiving 700 and 600 mg. hydralazine daily for treatment of hypertension, were reported by Drs. W. M. Kirkendall and E. B. Page, *J. Am. Med. Assoc.*, **167,** 427(1958). These were the only 2 instances noted by the physicians among 700 patients treated with hydralazine during a 5-yr. period. A syndrome resembling lupus erythematosus was noted in 6 instances. There was evidence that the 2 patients with polyneuritis were predisposed to that condition by a previous low dietary intake of pyridoxine. Recommended treatment for polyneuritis under these conditions is to stop hydralazine and administer pyridoxine (25 mg. i.m. or 100 mg. orally per day).

Ophthalmic Solutions and Eye Sensitivity

The threshold of irritation in the eye to instilled ophthalmic solutions of different strengths and pH was calculated by C. Trolle-Lassen, *Pharm. Weekbl.*, **93,** 148(1958). Considerable variation was noted in the sensitivity of individuals to solutions varying from normal lachrymal fluid values (f.pt. depression 0.52°, pH 7.4). Solutions causing irritation in not more than 1% of the test subjects were classed as nonirritant. Solutions with the equivalent of 0.7–1.4% sodium chloride and pH 7.3–9.7 were found to be nonirritant. It is noted that the normal eye tolerates hypertonic better than hypotonic solutions, and alkaline better than acid solutions. Substances such as urea pass freely through animal membranes, affect the osmotic pressure of solutions, and should be considered in adjusting ophthalmic solutions.

Phenol and Poison Ivy

A note by Dr. R. Hall, *J. Med. Soc. N.J.*, **55,** 305(July 1958), warns against the use of phenolated medication on poison ivy, sumac, or oak dermatitis. The temporary relief due to the phenol in phenolated lotions or other phenolated preparations is offset by the fact that phenol augments the vesicant action of the phenolic toxicodendrol causing the dermatitis. Dr. Hall observes that other chemical antipruritics which also coagulate proteins to a greater or lesser extent include oxyquinoline, crotonatoluide, and certain salicylates. He advises that adequate treatment for ivy poisoning, aside from prophylaxis, is one of the antiallergic medications as long as the hives persist, plus 10-minute soaks in unmedicated hot water.

Triamcinolone in Allergy, Dermatology, and Rheumatoid Arthritis

A report on the use of triamcinolone (9α - fluoro - 16α - hydroxy - Δ^1 - hydrocortisone; Aristocort) in the treatment of allergic disease, by Dr. S. M. Feinberg in *J. Am. Med. Assoc.*, **167,** 58 (May 3, 1958), concludes that triamcinolone "is a potent antiallergic hormone, producing therapeutic effects with about one-half the dosage required for prednisone. It produces most of the usual steroid hormone side-effects, such as moon facies, hyperglycemia, muscle cramps and epigastric distress. Unlike some of the other anti-inflammatory hormones it is diuretic and sodium depleting, which may be advantageous in other circumstances. In a minority of patients a peculiar effect is a combination of headache, dizziness, sleepiness, and weakness. In some cases these effects may necessitate withdrawal of the drug. It does not stimulate the appetite and may even depress it.

In clinical trials of triamcinolone in cases of psoriasis and other dermatoses, Drs. W. B. Shelley and D. M. Pillsbury, *J. Am. Med. Assoc.*, **167,** 959(June 21, 1958), found that with oral doses of 12–16 mg. daily the drug was highly antiallergic, antirheumatic, and anti-inflammatory, and therefore useful in a variety of dermatitides; but results with 36 psoriasis patients, where 24 showed no response, indicated that the use of triamcinolone should probably be limited to acute extending cases not controllable by other means or to very extensive and severe chronic forms.

Clinical treatment of rheumatoid arthritis in 67 patients with triamcinolone is reported by Dr. E. F. Hartung, *J. Am. Med. Assoc.*, **167,** 973 (June 21, 1958). He finds that the drug appears to have four important advantages over other steroids in almost all cases: lack of the production of edema; less gastrointestinal symptoms, particularly the peptic ulcer syndrome; less psychic irritation; and no effect on arterial blood pressure. Triamcinolone was suppressive of inflammation and rheumatic manifestations in doses roughly proportional to those of prednisone and prednisolone. This effect was established more slowly with triamcinolone than with the other corticosteroids, but at the same time unwanted side-effects were slower in asserting themselves. Triamcinolone, however, was found to retain many of the disturbing side-effects of the other corticosteroids, particularly its masculinizing effects, facial rounding, cutaneous purpura or ecchymosis, and acne. Increased sweating and leg cramps were prominent.

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starts

Sept. 1

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BIOMYDRIN®

nasal spray

buy the new "self-selling" display pack — one dozen unit

you pay—$12.54
you get—$21.96
YOUR PROFIT—$ 9.42

each bottle gives you 79c profit

ORDER TODAY!

WARNER-CHILCOTT *means*

FULL PROTECTION
HIGH PROFIT
FAST TURNOVER

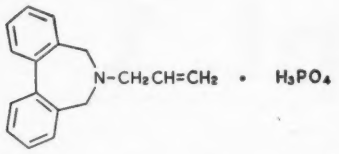
Prescription Practice

New and Nonofficial Drugs

Items Recently Evaluated by the American Medical Association Council on Drugs.

Azapetine Phosphate

Ilidar Phosphate (Roche); 6-Allyl-6,7 - dihydro - 5H - dibenz[c,e]azepine phosphate.



Actions and Uses. Azapetine phosphate is a potent adrenergic blocking agent with actions and uses similar to those of tolazoline HCl. In addition to blocking the vasoconstrictive response of smooth muscle to circulating or injected epinephrine, the drug also exerts a direct vasodilating effect on the wall of small blood vessels. The chief pharmacological effects of the drug are therefore related to peripheral vasodilation and include increases in skin temperature and peripheral blood flow as well as moderate decreases in blood pressure. Parasympathetic effects or changes in gastrointestinal tone and motility are minimal after adrenergic blockade with this agent.

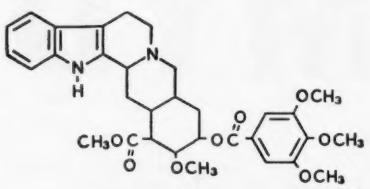
Azapetine phosphate is useful for the treatment of those peripheral vascular diseases in which vasospasm is the predominant cause of ischemia. These include such conditions as Raynaud's syndrome, acrocyanosis, acroparesthesia, causalgia, ulceration of the extremities due to chronic peripheral vasospasm, and sequelae of frostbite. The drug is considered ineffective in most patients with organic occlusive forms of peripheral vascular disease, such as arteriosclerosis obliterans, thromboangiitis obliterans (Buerger's disease), and acute arterial occlusion. Its value in the treatment of thrombophlebitis or the postphlebitic syndrome has not been established. Azapetine has also been used for the management of moderate to severe hypertension, but there is insufficient evidence to establish its effectiveness for this purpose.

Except for occasional instances of drug fever, serious untoward effects are rare during therapy with azapetine phosphate. Side-effects, however, are fairly common. Nausea, vomiting, lightheadedness, weakness, malaise, syncope, and postural hypotension frequently complicate therapy with this agent. Other less common side-effects include confusion, palpitation and tachycardia, anorexia, nasal congestion, headache, and xerostomia. As with all other adrenergic blocking agents, azapetine is contraindicated in any condition in which a fall in blood pressure may be undesirable or dangerous; thus, it should not be given to patients with severe coronary artery disease. Since adrenergic substances normally relax bronchial musculature, there is a presumptive small risk in administering adrenergic blocking drugs to patients with bronchial asthma. It has been reported that the administration of azapetine was associated with the reactivation of a previously diagnosed peptic ulcer; the reason for this is not established since there are no reported studies on the effects of this drug on gastric secretion.

Dosage. Azapetine phosphate is administered orally. An initial test dose of 25 mg. three times daily should be given for about seven days to screen out the occasional patient who cannot tolerate the drug. Thereafter, the usual dose for adults is about 50 to 75 mg. three times a day as determined by individual response.

Deserpidine

Harmonyl (Abbott); 11-Desmethoxyreserpine.

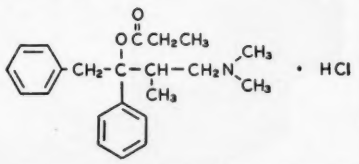


Actions and Uses. Deserpidine, an ester alkaloid isolated from *Rauwolfia canescens* Linn., is identical in chemical structure to reserpine except that it lacks the methoxy (CH_3-O-) group at the 11 position. The pharmacological actions of deserpidine are essentially the same as those of other active alkaloids of Rauwolfia, including reserpine. On the basis of animal experiments and some clinical observations, deserpidine is said to have a more rapid onset of action than reserpine, is somewhat less potent, and produces less lethargy and depression. However, these minor differences are probably of little clinical significance from the standpoint of overall effectiveness or dosage requirements, and both drugs have the same uses and limitations. (See the monograph on reserpine in NND.)

Dosage. Deserpidine is administered orally. For the treatment of mild anxiety states and mental disturbances, doses of 0.1 mg. per day may be sufficient. At least 2 to 3 mg. daily is required for the treatment of institutionalized patients with psychosis. For the treatment of mild essential hypertension, the initial dose is 0.25 mg. three or four times daily until the desired response has been obtained. Thereafter, blood pressure may be maintained with doses of as little as 0.25 mg. per day.

Dextro Propoxyphene Hydrochloride

Darvon (Lilly); *a-d*-4-Dimethylamino - 1,2 - diphenyl - 3 - methyl - 2 - butanol propionate.

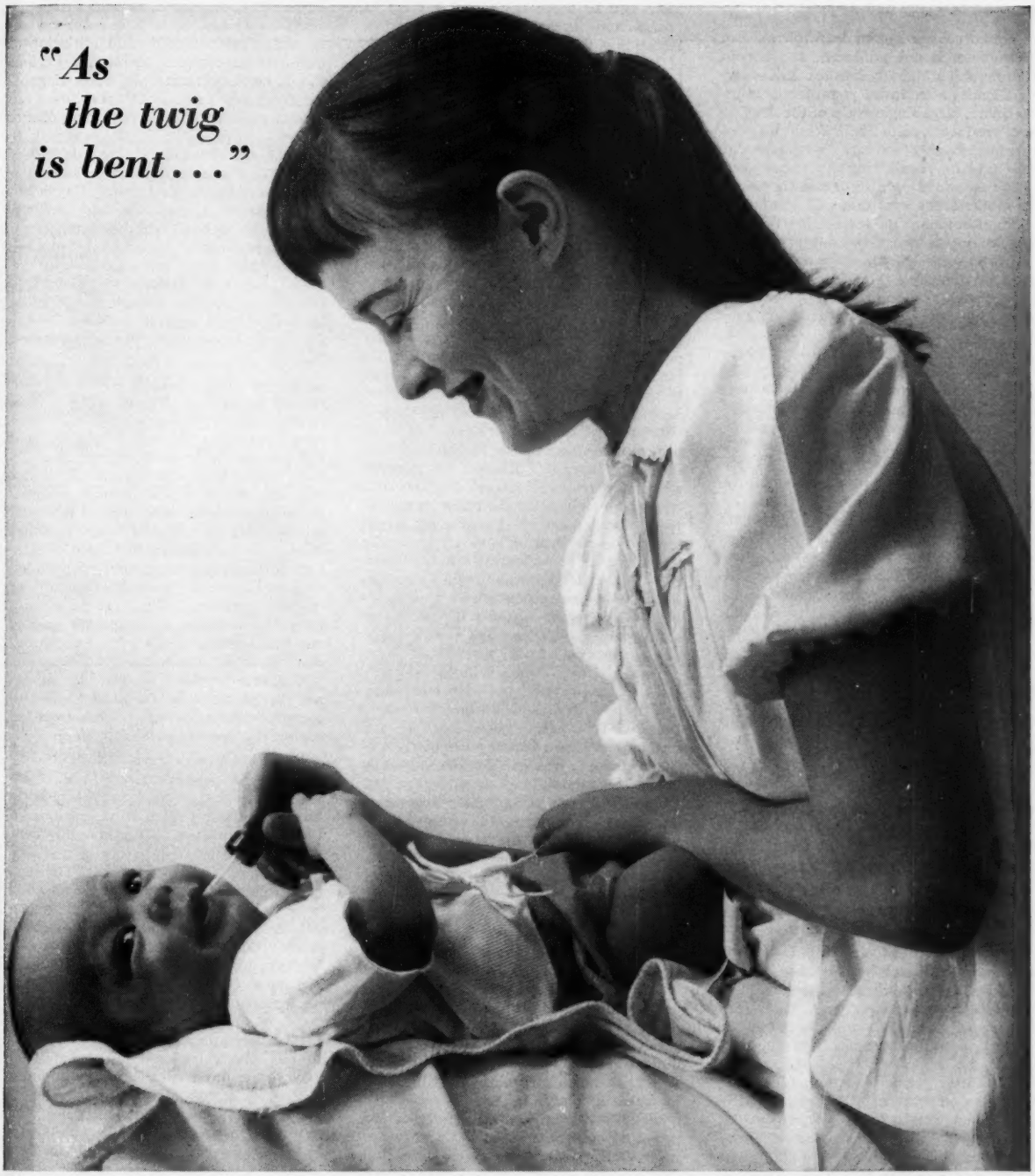


Actions and Uses. Dextro propoxyphene HCl, a tertiary-amino ester, is a synthetic, nonantipyretic, orally effective, analgesic compound, which is related pharmacologically to codeine. Milligram for mg., dextro propoxyphene HCl and codeine phosphate are approximately equal in analgesic potency, and both are used for the relief of the same type of pain. Like codeine, but unlike morphine and some of the more potent analgesics, dextro propoxyphene produces no respiratory depression after the administration of therapeutic doses. Its onset and duration of action are similar to those of codeine. Its absorption, metabolism, and excretion are not known.

Dextro propoxyphene HCl is useful for the relief of mild to moderate pain, especially that associated with chronic or recurrent diseases as, for example, in rheumatoid arthritis or in migraine. It can be used with other analgesics to augment their effectiveness and may prove to be useful for the relief of pain in many, but not necessarily all, situations in which codeine is ordinarily used. In rheumatoid arthritis it may well be combined with an anti-inflammatory agent, such as acetylsalicylic acid. The drug is not of sufficient potency to be of value in severe pain. It has little or no antitussive activity.

The addicting liability of dextro propoxyphene HCl has been extensively studied, and the evidence indicates that the drug has either little or none. In animals, no tolerance to the analgesic or lethal effects of the drug can be demonstrated after several weeks of chronic administration. In humans, prolonged administration produces none of the signs or symptoms which are considered characteristic of drug addiction; psychic craving

Continued on page 562



ZYMADROPS*

- Readily miscible with food and formula
- No refrigeration required
- Delightful new honey-lemon flavor

DOSAGE: *Infants and Children* — 0.6 cc. daily or as directed by a physician. Zymadrops may be administered by dropping directly on the tongue or mixing with water, milk, fruit juice, or any other foods.

SUPPLIED: In 15, 30 and 60 cc. bottles.

Upjohn THE UPJOHN COMPANY KALAMAZOO, MICHIGAN

*TRADEMARK, REG. U. S. PAT. OFF. — PEDIATRIC MULTIVITAMINS, UPJOHN

Continued from page 560

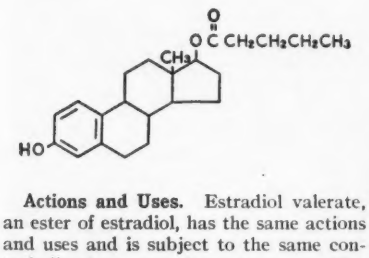
or euphoria is not observed; tolerance or dependence is not produced, and abrupt termination of therapy fails to result in any significant withdrawal symptoms. Furthermore, large single doses of the drug do not produce opiate-like effects in nontolerant, former narcotic addicts. The sole basis for considering dextro propoxyphene an addicting drug lies in its ability to suppress the symptoms of abstinence from morphine. However, this effect is quite weak, is less than that of codeine, and is not considered sufficient reason to establish the drug as an addicting agent. Hence, dextro propoxyphene does not come under the purview of the federal narcotic law.

The toxicity of dextro propoxyphene HCl is low and the margin of safety adequate. Nausea and vomiting have been noted but have occurred less frequently than with codeine. Large doses may also produce drowsiness and dizziness. Except for the rare patient who may exhibit hypersensitivity, at present there are no known contraindications to administration of dextro propoxyphene. The drug should not be given parenterally because of local irritating action.

Dosage. Dextro propoxyphene HCl is administered orally. The usual dose for adults is 65 mg. four times daily, alone or with other medication, as required for the relief of pain.

Estradiol Valerate

Delestrogen (Squibb); Estradiol-17-valerate.



Actions and Uses. Estradiol valerate, an ester of estradiol, has the same actions and uses and is subject to the same contraindications as other estrogens. (See the general statements on Ovaries and the subsection on Estrogens in New and Nonofficial Drugs.) The onset of action is prompt after a single intramuscular injection of an oil solution of the drug. Estrogenic effects persist for about three weeks. The drug is well tolerated, and, in therapeutic doses, undesirable side-effects are no more troublesome than those produced by other injectable oil solutions of estrogenic substances. It also can be administered concomitantly with a suitable progestational agent in the management of functional uterine bleeding and primary or secondary amenorrhea.

Dosage. Estradiol valerate is injected intramuscularly as a solution in sesame oil. For uterine or ovarian dysfunction or menstrual disorders, the usual single dose is 5 to 20 mg. This is generally repeated once every four weeks or once each menstrual period. For local manifestations of estrogen deficiency, such as pruritus vulvae, kraurosis vulvae, or senile vaginitis, the usual dose is 10 to 20 mg. repeated once after two to three weeks. For relief of postpartum breast engorgement when lactation is to be suppressed, a single dose of 10 to 25 mg. may be injected immediately after delivery.

Iron-Dextran Complex

Imferon (Lakeside); A colloidal solution of ferric hydroxide in complex with partially hydrolyzed dextran.

Actions and Uses. Iron-dextran complex is a stable, isotonic solution of inorganic iron held in chemical combination with the polysaccharide, dextran. The dextran used in this complex is of low molecular weight and is pharmacologically distinct from the dextran of high molecular weight that is sometimes employed as a blood volume expander. Iron-dextran complex is relatively nonirritating when injected intramuscularly and provides a concentrated and well-tolerated form of iron for the parenteral therapy of iron deficiency anemia. Except for patients with intercurrent infections, the iron thus administered is utilized almost quantitatively for hemoglobin formation. Rapid absorption of the drug is indicated by the appearance of hemosiderin in the bone marrow 12 hours after intramuscular injection. Hence, iron-dextran complex raises hemoglobin levels and restores depleted iron stores more rapidly and in a more predictable manner than orally given iron.

Iron-dextran complex is indicated solely for the treatment of iron deficiency anemia in those situations in which parenteral therapy is deemed preferable to oral medication. The drug is particularly useful in patients who cannot tolerate orally given iron preparations or who have gastrointestinal conditions, such as ulceration or severe diarrhea, which would contraindicate the use of iron given orally, as well as in cases of impaired iron absorption. It is also effective for the rapid replenishment of iron stores in selected patients in whom oral therapy is ineffective. Thus, in the treatment of hypochromic anemias of infancy or in the last trimester of pregnancy, iron-dextran complex will often provide a prompt clinical and hematological response in the unusual patient who may be resistant to orally given iron therapy. The substance also finds some use in selected hemorrhagic states, including gastrointestinal bleeding, in which available iron stores have been depleted and in which oral therapy cannot provide iron at a sufficiently rapid rate to meet the needs for hemoglobin formation. It is also useful postoperatively to replace transfusions to some degree. Finally, iron-dextran complex may be used in patients who cannot be relied upon to take oral medication, such as infants, geriatric and psychiatric patients, and occasionally in obstetrical patients.

Iron-dextran complex should be restricted for use only in diagnosed cases of iron deficiency anemia. If no iron deficiency exists, prolonged (and hence, improper) therapy with this agent will cause storage of iron, with consequent possibility of exogenous hemosiderosis. Such iron overload is particularly prone to occur in patients with hemoglobinopathies and other refractory anemias which might be erroneously diagnosed as iron deficiency anemia. Hence, if a hematological response is not observed after initiation of iron-dextran complex therapy, injections should be discontinued and other diagnostic measures taken. Of perhaps even greater importance from the standpoint of rational therapeutics is the necessity to seek the underlying cause of iron deficiency anemia and to treat that cause as well as to replace the needed iron. Physicians should guard against the false security which might be engendered when relatively mild hypochromic anemias of unknown pathogenesis show remarkable improvement with iron therapy. It should be borne in mind that chronic, occult blood loss, often from gastrointestinal lesions, is a common cause of iron deficiency anemia in adults.

On the basis of both laboratory and clinical experience, the toxicity of iron-dextran complex appears to be low, and the drug is considered safer to administer than the intravenously administered preparation, saccharated iron oxide. No serious systemic or local reactions have been observed, although a mild type of urticarial reaction is occasionally encountered. Rarely, a more generalized type of reaction that is typical of any parenteral injection may follow the administration of iron-dextran complex. This may be characterized by headache, fever, malaise, nausea, vomiting, aching of the lower extremities, and regional lymphadenopathy. Some patients report pain at the site of injection, but there is no evidence that iron-dextran complex causes damage to muscle tissue, even after repeated administration.

Dosage. Iron-dextran complex, which contains the equivalent of 50 mg. of elemental iron in each cc., is administered by intramuscular injection only. Before initiating therapy, the total iron requirement should be calculated by using a dosage table or a convenient formula. The most precise calculations of dosage are based on hemoglobin deficit, as determined by consulting a table of normal hemoglobin levels. Thus, for adults, the following formula might be applied: [normal value of hemoglobin (Gm. per 100 cc.)–patient's hemoglobin level (Gm. per 100 cc.)] × 0.255 = Gm. of iron needed. After the total iron requirement has been calculated, iron-dextran complex is injected daily or every other day until the required amount is given. A dosage of 50 mg. (1 cc.) is generally administered the first day, and amounts up to 250 mg. (5 cc.) daily may be given thereafter to normal or obese adults. Children who weigh over 9 Kg. (20 lb.) and small adults should receive no more than 100 mg. (2 cc.) daily. Dosage for children of 3.6 to 9 Kg. (8 to 20 lb.) is 50 mg. (1 cc.) daily, the maximum for infants weighing under 3.6 Kg. (8 lb.) is 25 mg. (0.5 cc.) daily. Repeat courses of iron-dextran complex are not usually indicated.

Iron-dextran complex is deep red in color and causes staining of the skin if the solution is allowed to leak along the tract of the needle. In order to avoid this, a long needle should be used for intragluteal injection and the subcutaneous tissue over the site of injection should be firmly pushed aside before inserting the needle.

New Prescription Products

Actidil Tablets
Actidil Syrup

Description: Each scored tablet contains 2.5 mg., and each 5 cc. of syrup contains 1.25 mg. Actidil (triprolidine HCl).

Indications: Antihistaminic in allergic conditions.

Administration: 1 tablet or 2 teaspoonfuls (2.5 mg.) 2 or 3 times daily; children over 2 yrs. 1.25 mg., and infants 0.6 mg. 2 or 3 times daily.

Form Supplied: Tablets, bottles of 100; syrup, pint bottles.

Source: Burroughs Wellcome & Co., Tuckahoe, N.Y.

Delvex Tablets

Description: Each coated tablet contains 200 mg., 100 mg., or 50 mg. of Delvex (dithiazanine iodide; 3,3′-diethylthiadicarbocyanine iodide).

Indications: Anthelmintic in ascariasis (roundworm), trichuriasis (whipworm), strongyloidiasis, and enterobiasis (pinworm).

Administration: Orally, 200 mg. 3 times daily for 5 days. Children 20–60 lbs., 100 mg. per 100 lbs. of body weight, in divided doses, daily for 5 days.

Form Supplied: All sizes in bottles of 50 tablets. The 100-mg. and 200-mg. tablets also in bottles of 1,000.

Source: Eli Lilly & Co., Indianapolis, Ind.

Diuril Tablets

Description: Each scored tablet contains 250 mg. or 500 mg. Diuril (chlorothiazide).

Indications: In treatment of edema and hypertension.

Administration: In edema: 500–1,000 mg. once or twice daily. In hypertension: 250 mg. twice daily, or 500 mg. 3 times daily as required.

Form Supplied: Both strengths in bottles of 100 and 1,000 tablets.

Source: Merck Sharp & Dohme, Philadelphia 1, Pa.

Meloxine Tablets

Description: Each tan-colored, coated tablet contains 10 mg. Meloxine (methoxsalen, 8-methoxypsoralen).

Indications: To enhance pigmentation and protect against sunburn, and to repigment vitiliginous areas.

Administration: Dosage is detailed in literature with package.

Form Supplied: Package of 28 tablets.

Source: The Upjohn Co., Kalamazoo, Mich.

Ultandren Tablets

Description: Each tablet contains 2 mg. (light green, scored) or 5 mg. (violet, scored) of Ultanden (fluoxymesterone; 9α - fluoro - 11β - hydroxy-17α - methyltestosterone).

Indications: Where androgenic and anabolic effects are desirable. Taken orally, fluoxymesterone is stated to have up to 5 times the potency of methyltestosterone tablets.

Administration: As prescribed by physician, as indicated by the condition and the patient being treated.

Form Supplied: Both sizes in bottles of 40 tablets.

Source: Ciba Pharmaceutical Products Inc., Summit, N.J.

Urobiotic Capsules

Description: Each capsule contains 125 mg. oxytetracycline HCl with glucosamine (Cosa-Terramycin), 250 mg. sulfamethizole, and 50 mg. phenylazodiaminopyridine HCl.

Indications: In susceptible genitourinary infections, as prophylactic in genitourinary or pelvic surgery, with instrumentation, and in patients with lesions. Contraindicated in patients with chronic glomerulonephritis, hepatitis, hepatic failure, uremia, and obstructive lesions of the urinary tract. Usual precautions for therapy with broad-spectrum antibiotics and sulfonamides should be observed.

Administration: 1–2 capsules 4 times daily for at least 7 days or until bacteriologic cure in acute urinary tract infections. Children's dosage is related to age, weight, and severity of infection.

Form Supplied: Bottles of 50 capsules.

Source: Pfizer Laboratories, Brooklyn 6, N.Y.

Other New Products

Chemicals, clinical trial drugs, diagnostic aids, equipment for the retail and hospital pharmacy.

Ambar No. 2 Extentabs

Orange-colored, coated tablets containing, in each: methamphetamine, 15 mg., and phenobarbital, 64.5 mg., are marketed by *A. H. Robins Co.* in bottles of 100.

Aristocort Tablets 1 mg.

Lederle Laboratories has marketed a 1-mg. tablet (yellow, scored) of Aristocort (triamcinolone). For indications and dosage see THIS JOURNAL, **19,** 168 (Mar. 1958). The new size is supplied in bottles of 50, 500, and 1,000.

Azo-Sulfa B/A Tablets

Press-coated tablets containing, in each core: phenylazodiamine-pyridine HCl, 50 mg.; hyoscine .HBr, 0.0065 mg.; atropine sulfate, 0.0194 mg.; and hyoscyamine sulfate, 0.1037 mg.; and in each outer coating: sulfacetamide, 125 mg., are marketed by *S. J. Tutag Co.* for antibacterial, analgesic, and antispasmodic action in the urinary tract. Contraindicated in renal insufficiency. Dosage, 2–3 tablets 3–4 times daily; children 6–12 yrs., half the adult dosage. Supplied in bottles of 100 and 1,000.

Belbarmine Tablets

Bisected yellow tablets containing, in each: *d*-desoxyephedrine, 5 mg.; phenobarbital, 32 mg.; hyoscine HBr, 0.0072 mg.; atropine sulfate, 0.024 mg.; and hyoscyamine HBr, 0.128 mg., are marketed by *Charles C. Haskell* for use in obesity and tension-anxiety states. Dosage, 1 tablet 2–3 times daily. Supplied in bottles of 100, 1,000, and 5,000.

All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Blemerase Lotion

A suspension containing colloidal sulfur 8%, salicylic acid 2.25%, and Hyamin 10X 0.08%, with neocalamine, talc, and color, is marketed by *S. J. Tutag Co.* for use in acne therapy. Supplied in 4-oz. and pint bottles.

Bonamine Elixir

A cherry-flavored elixir containing, in each 5-cc. teaspoonful, meclizine (Bonamine) equivalent to 12.5 mg. meclizine HCl, and butylparaben 0.02%, is marketed by *Chas. Pfizer & Co.* for use in the prevention and treatment of motion sickness, morning sickness in pregnancy, vertigo, nausea and vomiting associated with labyrinthine and vestibular disturbances. Dosage, 2 teaspoonfuls (25 mg.) once daily. Supplied in pint bottles.

Caldecort Ointment

A topical ointment containing hydrocortisone acetate, calcium undecylenate, and neomycin is marketed by *Maltbie Labs.* for use as an antibacterial, antifungal, anti-inflammatory, and antipruritic agent. Supplied in 7-Gm. tubes.

Cerumenex Solution

A solution of cerapon 10% in propylene glycol with chlorobutanol 0.5% is marketed by *Purdue Frederick Co.* for removal of cerumen (ear wax). To use, fill ear canal with solution and insert cotton plug for 15–20 min. or overnight if necessary, then syringe with lukewarm water. Supplied in 15-cc. dropper bottles for o-t-c sale.

Cort-quin Creme

A topical cream containing hydrocortisone 0.5% or 1% and diiodohydroxyquin 1% in Acid Mantle base is marketed by *Dome Chemicals* for use in a wide variety of subacute and chronic dermatoses complicated or threatened with infection. Applied lightly once or twice daily. Supplied, both forms, in 0.5-oz. and 1-oz. tubes.

Es-a-Cort Creme

A cream containing in each Gm.: vitamin A 3,333 USP Units, estrone 1867 I.U., hydrocortisone 5 mg. or 10 mg., in Acid Mantle base, is marketed by *Dome Chemicals* for local use in anogenital pruritis, senile vulvovaginitis, kraurosis vulvae and related conditions. Apply sparingly to affected area twice daily. Warning: Excessive rubbing or too vigorous application of Es-a-Cort may damage the epithelium. Should not be prescribed to women with cancer of the breast or womb. Infections should be treated with appropriate antibiotics or chemotherapy. Supplied, with 0.5% or 1% hydrocortisone, in 0.5-oz. tubes.

Ferro-Stetric Tablets

Smith-Dorsey has marketed a prenatal dietary supplement which provides in each tablet: Feolate, 240 mg. (133 mg. $FeSO_4$ + 107 mg. glycine); with vitamin A, B_1, B_2, B_6, B_{12} (with intrinsic factor), C, D_3, folic acid, calcium pantothenate, nicotinamide, $CaCO_3$, and micronutrients. Dosage is 1 tablet daily. Supplied in bottles of 100.

Formātrix Tablets

Tablets containing, in each: Premarin (conjugated estrogens equine), 1.25 mg.; methyltestosterone, 10 mg.; and ascorbic acid, 400 mg., are marketed by *Ayerst Laboratories* for use in the relief of low back pain and to promote healing of fractures in osteoporosis. Supplied in bottles of 60 and 500 tablets.

Gelfoam Dental Packs, Size 2

The *Upjohn Co.* has marketed its Gelfoam Dental Packs of absorbable gelatin in a 10 x 20 mm. (2 sq. cm.) size, about half the size already available. The new size is supplied in jars of 15 sponges.

Gui-acua Injection

An aqueous solution containing, in each cc.: guaiacol, 50 mg.; cacodylic acid (arsenic derivative), 25 mg.; benzyl alcohol, 0.06 cc.; chlorobutanol, 5 mg.; and intracaine 0.5%, is marketed by *S. J. Tutag Co.* for parenteral use as a liquefying expectorant for relief in respiratory conditions. Dosage, initially, subcutaneously 2 cc. daily for a week then 1 cc. 3 times weekly. Not recommended for infants. Supplied in 20-cc. vials.

Guiamide Suspension

A suspension containing, in each 5 cc.: sulfaguanidine, 0.5 Gm.; kaolin, 2 Gm.; and pectin, 40 mg., is marketed by *S. J. Tutag Co.* for use in nonspecific diarrheas. Dosage, orally 3–6 teaspoonfuls 3–4 times daily; children 2–4 teaspoonfuls 3 times daily; infants, 1–2 teaspoonfuls 3 times daily. Supplied in 4-oz., pint and gallon bottles

Harmonyl-N Filmtabs

Abbott Laboratories has marketed tablets containing, in each, Harmonyl (deserpidine), 0.25 mg., and Nembutal (pentobarbital), 30 mg.; or 0.1 mg. and 15 mg. of the drugs, respectively. Dosage, in mild hypertension, 2 Filmtabs daily initially, then 1 or 2 Filmtabs daily; in anxiety, tension, and nervousness, 1–4 Filmtabs daily as required. Supplied, both strengths in bottle of 100 and 500, and the stronger tablets in bottles of 1,000.

Heparin Sodium Injection

Abbott Laboratories has marketed heparin sodium sterile solution, 20,000 u./cc. in 1-cc. Abboject disposable syringe with needle, for i.m. or deep s.c. injection in long-term anticoagulant therapy. Supplied in boxes of 5 units.

Kynex Acetyl Pediatric Susp.

A cherry-flavored suspension containing, in each 5 cc.; N^1-acetyl sulfamethoxypyridazine equivalent to 250 mg. sulfamethoxypyridazine (Kynex); with methylparaben, 0.64 mg., and propylparaben, 0.16 mg., is marketed by *Lederle Laboratories* for pediatric treatment of genitourinary and upper respiratory infections, bacillary dysenteries, and surgical and soft tissue infections due to sulfonamide-sensitive organisms. Dosage, initial, 1 teaspoonful (5 cc.) for each 20 lb. of body weight, then 2.5 cc. on subsequent days, immediately after meals. Supplied in 4-oz. bottles.

Meti-Derm Aerosol

Schering Corporation has marketed a pressurized solution containing 50 mg. prednisolone in 150 Gm. and delivering 0.5 mg. of drug with each 3-second spray. This dosage form is particularly indicated for allergic dermatitis, poison ivy, and poison oak. To apply, shake the aerosol can and spray from 4–6 in. from the skin. Repeat 4–5 times daily.

Neosporin Antibiotic Lotion

A lotion containing, in each cc.; polymyxin B sulfate, 10,000 u., and neomycin sulfate, 5 mg., in a water-miscible base with 0.25% methylparaben, is marketed by *Burroughs Wellcome & Co.* for topical use as an antibacterial agent. May be applied 2–5 times daily. Supplied in 20-cc. squeeze bottle.

Tronothane HCl Solution, Aerosol

A 1% solution of pramoxine (Tronothane) HCl in aerosol form is marketed by *Abbott Laboratories* to be sprayed as a topical anesthetic for temporary relief of pain or itching of minor burns or sunburn, nonpoisonous insect bites, poison ivy, oak, or sumac, and minor skin irritations. Dosage, 3 or 4 times daily. Not for prolonged use, and do not apply to large areas of the body nor in the eyes or nose. Supplied in plastic coated bottles containing 60 cc. or 120 cc. of solution.

Ultran Tablets

Eli Lilly and Co. has marketed its tranquilizer, phenaglycodol (Ultran), as light-green, scored tablets of 200 mg. each. They are supplied in bottles of 100. The drug also is available as 300-mg. white and green Pulvules. Dosage is 200–400 mg. 3 times daily; children, 100 mg. per 50 lbs. of body weight 3 times daily.

Clusivets Tablets

Ayerst Laboratories has marketed another form of its vitamin-mineral dietary supplement. Supplied in bottles of 100 tablets. Also available are Clusivol capsules and syrup.

Lactazine-MRT Deltabs

Scored tablets containing, in each: sulfadiazine, 85 mg.; sulfamerazine, 83 mg.; sulfamethazine, 83 mg.; and magnesium lactate, 324 mg., are marketed by *Marvin R. Thompson Inc.*, for use in systemic infections susceptible to sulfonamide therapy. Dosage, 8 tablets initially, then 4 tablets every 4 hrs. Supplied in bottles of 50 and 250.

Lycinate Vaginal Tablets

Lloyd Brothers has marketed tablets containing, in each: diidohydroxyquin, 100 mg.; sodium lauryl sulfate, 5 mg.; dioctyl sodium sulfosuccinate, 5 mg.; potassium alum, 14 mg.; lactose, 380 mg.; and anhyd. dextrose, 650 mg., for use in control of vaginal leukorrhea. Dosage, 2 tablets once a day. Supplied in boxes of 50 with applicator.

Neosporin Vaginal Suppositories

Wedge - shaped suppositories containing, in each: polymyxin B sulfate, 20,000 u.; neomycin sulfate, 5 mg.; acetarsone, 250 mg.; beta-lactose *q.s.* 1 Gm., in a water-soluble base containing a wetting agent, are marketed by *Burroughs Wellcome & Co.* for use in vaginitis, cervicitis, trichomoniasis, pre- and postsurgical treatment, and malodorous discharge due to infection. Dosage, 1 suppository once or twice daily for 6–10 days. Supplied in boxes of 12 foil-wrapped suppositories.

Nesacaine w/Epinephrine Inj.

Maltbie Laboratories now markets Nesacaine 1% and 2% solutions with epinephrine 1:100,000 for infiltration, field, and regional block; and the 3% solution with epinephrine 1:200,000 for caudal and epidural block. The 3 strengths are also available without epinephrine. The 1% and 2% solutions are supplied in 30-cc. multiple-dose vials; the 3% solutions in 30-cc. single-dose vials.

Nitrillin Tablets

Paul Maney Laboratories has marketed tablets containing, in each outer layer, 0.4 mg. glyceryl trinitrate, and, in each tablet core, 15 mg. pentaerythritol tetranitrate and 100 mg. dyphylline, with a flavored layer around the core. In angina conditions, a tablet is taken sublingually for relief of pain; when the flavor disappears the remainder of the tablet is swallowed. For maintenance of mild to moderately severe cases, dosage is 2–4 tablets daily swallowed whole; in severe cases up to 6 tablets daily. Use cautiously in patients with glaucoma, increased intracranial pressure, and nitrate sensitivity. Supplied in bottles of 100 and 1,000. Nitrillin tablets with 15 mg. phenobarbital also are available.

Prednis–C. V. P. Capsules

Capsules containing, in each: prednisolone, 4 mg.; water-soluble citrus bioflavonoid compound, 100 mg.; ascorbic acid, 100 mg.; aluminum hydroxide, 100 mg.; and magnesium oxide, 100 mg., are marketed by *Arlington-Funk Labs.* for use as an anti-inflammatory, antiallergic, antiarthritic agent. Dosage, initially, 2–5 capsules daily in divided doses; reduced after one week, by 1 or 2 capsules every 4–5 days to a minimum maintenance dose. Cautions and contraindications are those of adrenocortical therapy. Supplied in bottles of 30, 100, and 500.

Prednyl Tablets

Tablets containing, in each: prednisolone, 1 mg.; salicylamide, 324 mg.; water-soluble citrus bioflavonoid compound, 33.3 mg.; and aluminum hydroxide, 50 mg., are marketed by *Arlington-Funk Labs.* for use in the relief of pain, muscle spasm, inflammation and swelling in rheumatoid arthritis and other rheumatoid conditions. Dosage, initially, 1–3 tablets 4 times daily after meals and at bedtime; reduce gradually to minimum maintenance dosage of 3–6 tablets daily. Cautions and contraindications are those of adrenocortical therapy. Supplied in bottles of 100 and 500.

Pro-Banthine w/Dartal

Compression-coated aqua tablets containing, in each: 15 mg. Pro-Banthine (propantheline) and 5 mg. Dartal (thiopropazate) di-HCl, are marketed by *G. D. Searle & Co.* for use in the treatment of peptic ulcer, gastritis, pylorospasm, chronic intestinal hypermotility, spastic constipation, mucous colitis, biliary dyskinesia, etc., particularly with prominent emotional or anxiety overlay. Dosage is 1 tablet 3 times daily. Supplied in bottles of 100 and 500.

Saffolin Capsules

Capsules containing, in each: safflower oil, 500 mg.; vitamin E (mixed tocopherols N.F.), 2.5 I.U.; 'pyridoxine, 5 mg.; and niacin, 20 mg., are marketed by *S. J. Tutag Co.* as a modified source of linoleic acid for use in arterial conditions. Dosage, therapeutic, 6–8 capsules in divided doses with meals; maintenance, 1 capsule with meals.

Salundek Solution

A solution containing salicylanilide 3%, mono- and dichloro-salicylanilides 2%, undecylenic acid 2%, and alcohol 55%, is marketed by *Maltbie Laboratories* for use in the treatment of ringworm of the scalp. Supplied in 3-oz. bottles with applicator cap. The label formula does not include zinc undecylenate which is in Salundek ointment.

Sodestrin Injection

An aqueous injection containing, in each cc.: potassium estrone sulfate (in soln.), 1 mg., and estrone (in susp.), 2 mg., is marketed by *S. J. Tutag Co.* as a source of rapid and prolonged estrogenic activity for use in the menopausal patient. Dosage, deep i.m. injection only, 0.25–1 cc. once or twice weekly. For control of uterine bleeding of endocrine origin, 1–2 cc. daily for several days may be required. Contraindicated in carcinoma of the breast or genital tract, or in familial tendency to malignancy. Supplied in 10-cc. vials.

Vesprin Emulsion

E. R. Squibb & Sons has marketed Vesprin (trifluprom azine HCl), the antinauseant-antiemetic, as a vanilla-flavored oral emulsion containing the equivalent of 10 mg. of the drug per cc. Supplied in 30-cc. dropper bottles and 120-cc. bottles. Vesprin is available also as oral tablets and parenteral solution.

Vitamin B_{12} Stablets Type II

A form of vitamin B_{12} which retains its potency in tablet and capsule formulations of vitamins and minerals is available from *Chas. Pfizer & Co.* in the form of Stablets. The new Type II is an adsorbate of 1% cobalamin concentrate on ion exchange resin. Type I is an adsorbate of crystalline B_{12} on resin.

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Donnatal®
☐ Tab. 100's ☐ Tab. 500's ☐ Tab. 1000's
☐ Cap. 100's ☐ Cap. 500's ☐ Cap. 1000's
☐ Elix. 16 oz. ☐ Elix. 1 gal. ☐ Extentabs 100's ☐ Extentabs 500's

Ambar®
☐ Tab. 100's ☐ Tab. 500's
☐ Extentabs 100's ☐ Extentabs 500's

Ambar® No. 2
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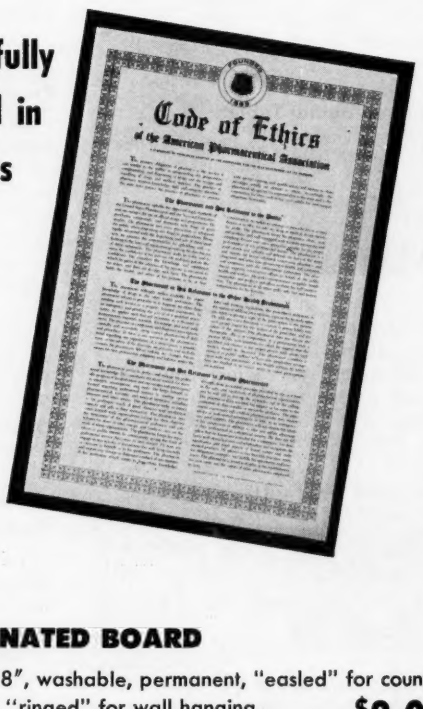

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Cumulative Index

New Prescription Products

Listed by Product Name

Actidil tabs., —syr., BW&Co., 563
Al-Mg Co-precipitated Gel, Reheis, 444
Ambar No. 2 Extentabs, A. H. Robins Co., 563
Aristocort tabs. 1 mg, Lederle, 563
Azo-Sulfa B/A tabs., Tutag, 563

Belbarmine tabs., Charles C. Haskell, 563
Betadine soln., Tailby-Nason, 444
Blemerase lot., Tutag, 564
Bonamine elix., Pfizer, 564
Bremil, Liquid Infant Food, Borden, 509

Caldecort oint., Maltbie, 564
Capsebon susp., Pitman-Moore, 509
Cerumenex soln., Purdue Frederick, 564
Clusivets tabs., Ayerst, 565
Cort-quin Creme, Dome, 564

Delvex tabs., Lilly, 563
Devarex caps., Pharmaceuticals, Inc., 444
Diuril tabs., Merck S&D, 563
Dramamine-D tabs., Searle, 444

Engran baby drops, Squibb, 510
Erythrocin–I.M. inj., Abbott, 509
Es-a-cort Creme, Dome, 564
Esdone tabs., Lloyd, D&W, 510

Feosol Spansule caps., SKF, 510
Fermatin caps., Rorer, 510
Ferro-Stetric tabs., Smith-Dorsey, 564
Florinef-S cream, Squibb, 444
Formatrix tabs., Ayerst, 564
Fungizone for inj., Squibb, 444

Gelfoam Dental Packs, size 2, Upjohn, 564
Gradumet Tral tabs.,—w/**Phenobarbital tabs.,** Abbott, 510
Gui-acua inj., Tutag, 564
Guiamide susp., Tutag, 564

Harmonyl-N Filmtabs, Abbott, 564
Heparin Sodium inj., Abbott, 564

Ivy-Eze lot., Lloyd, D&W., 444

Kantrex caps.,—soln., Bristol, 509
Kayexalate Resin powd., Winthrop, 509
Kynex Acetyl pediatric susp., Lederle, 564

Lactazine-MRT Deltabs, M. R. Thompson, 565
Lorfan pediatric ampuls, Roche, 510
Lycinate vaginal tabs., Lloyd Bros., 565

Marezine pediatric suppos., BW&Co., 444
Margel Deltabs, M. R. Thompson, Inc., 510
Margel-MRT Deltabs, M. R. Thompson, Inc., 444
Margonovine Delpuls and Deltabs, M. R. Thompson, Inc., 510
Medache tabs., Organon, 445
Megimide inj., Abbott, 509
Meloxine tabs., Upjohn, 563
Meti-Derm Aerosol, Schering, 564
Miltrate tabs., Wallace Labs., 445
Murel inj.,—**tabs.,**—w/**phenobarbital tabs.,** Ayerst, 509

Nebralin tabs., Smith-Dorsey, 445
Neohydrin w/Vitamins tabs., Lakeside Labs., 445
Neosporin antibiotic lot., BW&Co., 564
Neosporin vaginal suppos., BW&Co., 565
Nesacaine w/Epinephrine inj., Maltbie, 565
Niatric elix., Ascher, 510
Nitrillin tabs., Paul Maney, 565
Norisodrine sulfate starter set, Abbott, 510

Obocell TF tabs., Irwin, Neisler, 445

Polymagma Plain susp., Wyeth, 510
Predmycin ophthalmic soln., Allergan Corp., 445
Prednis-C.V.P. caps., Arlington-Funk, 565
Prednyl tabs., Arlington-Funk, 565
Pro-Banthine w/Dartal, Searle, 565
Probilagol liq., Purdue Frederick, 445
Pyribenzamine Lontabs 50 mg., Ciba, 445

Ryprogen Diagnostic Aid, Organon, 445
Saffolin caps., Tutag, 565
Salundek soln., Maltbie, 565
Sinaxar tabs., Armour, 444
Sodestrin inj., Tutag, 565
Softran Softabs, Stuart Co., 445
Spensin-PS susp., Ives-Cameron Co., 445
Suitrate liq., E. L. Patch Co., 510

Tao caps., Roerig, 444
Tao for oral susp., Roerig, 445
Tedral anti-H tabs., Warner-Chilcott Labs., 445
Teserene tabs., Lloyd,D&W, 510
Tetrex w/Triple Sulfas syr., Bristol, 445
Thorazine Spansule caps. 300-mg., SKF., 445
Trilafon Repetab tabs., Schering, 510
Tronothane HCL soln. Aerosol Abbott, 564

Ultandren tabs., Ciba, 563
Ultran tabs., Lilly, 564
Urobiotic caps., Pfizer, 563

Vesprin emul., Squibb, 565
Vitamar Forte liq., Columbus Pharm. Co., 445
Vitamin B_{12} Stablets Type II, Pfizer, 565

Listed by Manufacturer

Abbott Laboratories
Erythrocin–I.M. inj., 509
Gradumet Tral tabs.,—w/Phenobarbital tabs., 510
Harmonyl-N Filmtabs, 564
Heparin Sodium inj., 564
Megimide inj., 509
Norisodrine sulfate starter set, 510
Tronothane HCL soln. Aerosol, 564

Allergan Corp.
Predmycin ophthalmic soln., 445

Arlington-Funk Labs.
Prednis–C.V.P. caps., 565
Prednyl tabs., 565

Armour Laboratories
Sinaxar tabs., 444

B. F. Ascher & Co.
Niatric elix., 510

Ayerst Laboratories
Clusivets tabs., 565
Formatrix tabs., 564
Murel inj.,—tabs.,—w/Phenobarbital tabs., 509

Borden Co.
Bremil, Liquid Infant Food, 509

Bristol Labs.
Kantrex caps.,—soln., 509
Tetrex w/Triple Sulfas syr., 445

Burroughs Wellcome & Co.
Actidil tabs., —syr., 563
Marezine pediatric suppos., 444
Neosporin antibiotic lot., 564
Neosporin vaginal suppos., 565

Ciba Pharmaceutical Products Inc.
Pyribenzamine Lontabs 50 mg., 445
Ultandren tabs., 563

Columbus Pharmacal Co.
Vitamar Forte liq., 445

Dome Chemicals
Cort-quin Creme, 564
Es-a-cort Creme, 564

Charles C. Haskell
Belbarmine tabs., 563

Irwin, Neisler & Company
Obocell TF tabs., 445

Ives-Cameron Company
Spensin-PS susp., 445

Lakeside Laboratories, Inc.
Neohydrin w/Vitamins tabs., 445

Lederle Laboratories
Aristocort tabs. 1 mg., 563
Kynex Acetyl pediatric susp., 564

Ely Lilly & Co.
Delvex tabs., 563
Ultran tabs., 564

Lloyd Brothers
Lycinate vaginal tabs., 565

Lloyd, Dabney & Westerfield, Inc.
Esdone tabs., 510
Ivy-Eze lot., 444
Teserene tabs., 510

Maltbie Labs.
Caldecort oint., 564
Nesacaine w/Epinephrine inj., 565
Salundek soln., 565

Paul Maney Laboratories
Nitrillin tabs., 565

Merck Sharp & Dohme
Diuril tabs., 563

Organon, Inc.
Medache tabs., 445
Ryprogen Diagnostic Aid, 445

E. L. Patch Co.
Suitrate liq., 510

Pfizer Laboratories
Bonamine elix., 564
Urobiotic caps., 563
Vitamin B_{12} Stablets Type II, 565

Pharmaceuticals, Inc.
Devarex caps., 444

Pitman-Moore Co.
Capsebon susp., 509

Purdue Frederick Co.
Cerumenex soln., 564
Probilagol liq., 445

Reheis Company
Al-Mg Co-precipitated Gel, 444

A. H. Robins Co.
Ambar No. 2 Extentabs, 565

Roche Laboratories
Lorfan Pediatric ampuls, 510

J. B. Roerig and Company
Tao caps., 444
Tao for oral susp., 445

Wm. H. Rorer, Inc.
Fermatin caps., 510

Schering Corp.
Meti-Derm Aerosol, 564
Trilafon Repetab tabs., 510

G. D. Searle & Co.
Dramamine-D tabs., 444
Pro-Banthine w/Dartal, 565

Smith-Dorsey
Ferro-Stetric tabs., 564
Nebralin tabs., 445

Smith Kline & French
Feosol Spansule caps., 510
Thorazine Spansule caps. 300-mg., 445

E. R. Squibb & Sons
Engran baby drops, 510
Florinef-S cream, 444
Fungizone for inj., 444
Vesprin emul., 565

Stuart Company
Softran Softabs, 445

Tailby-Nason Co.
Betadine soln., 444

Marvin R. Thompson, Inc.
Lactazine-MRT Deltabs, 565
Margel Deltabs., 510
Margel-MRT Deltabs, 444
Margonovine Delpuls and Deltabs, 510

S. J. Tutag Co.
Azo-Sulfa B/A tabs., 563
Blemerase lot., 564
Gui-acua inj., 564
Guiamide susp., 564
Saffolin caps., 565
Sodestrin inj., 565

Upjohn Company
Gelfoam Dental Packs, size 2, 564
Meloxine tabs., 563

Wallace Laboratories
Miltrate tab., 445

Warner-Chilcott Laboratories
Tedral anti-H tabs., 445

Winthrop Laboratories
Kayexalate Resin powd., 509

Wyeth Laboratories
Polymagma Plain susp., 510

Advertising Index

Abbot Laboratories
Dayalets.....110, May 2nd cover
Gradumet Tral..... 227
Iberol.....facing 53, 245, 321, 497
Loewy Sucaryl & Vitamin Bottle.....facing 128–129
Selsun.....facing 52, 244, 320, 496
Sur-Bex.....Jan., July, Sept., 2nd cover, 239, 252, 377

The American Druggists' Insurance Co......68, 236, 336, 457

American Pharmaceutical Assn.
Code of Ethics.....237, 373
Publications for Sale..... 169
Subscription Rate Changes... 186

Ames Company, Inc.
Aminet..... 452
Clinitest.....130, 258
Clinitest Set..... 524
Decholin..... 8

Anson, Inc.
Specialty Jewelry..... .....161, 188, 260, 341

Atlas Powder Company
N.F. and U.S.P. Pharmaceutical Aids.....237, 373

Becton, Dickinson and Company
Ace-Hesive.....63, 119

Bristol Laboratories Inc.
Azotrex Syrup.....261, 332
Tetrex Intramuscular '250'.. 4, Feb. 3rd cover, Mar. 2nd cover, 195, 459
Tetrex c T/S.....261, 332

Bulman Corporation
Modular Rx Department..163, 317
Store Planning and Equipment..... 49

Burroughs Wellcome & Company
Empirin Compound.....189, 269

Chesebrough-Pond's Inc.
Vaseline Petrolatum Gauze, U.S.P.....112, 262, 340, 523

Ciba Pharmaceutical Products
Nupercainal Lotion..... .....183, 255, June 2nd cover

Coca-Cola Company
Coca Cola.....263, 433

C. B. Fleet Company, Inc.
Clysmathane..7, 116, 315, 399, 527
FEDU..... ...69, 197, June, Aug. 3rd cover

Geigy Pharmaceuticals.....13, 70

Hynson, Westcott & Dunning
Lactinex. Apr., June, Aug. 4th cover
Lutrexin.....Mar., Sept. 4th cover
Mercurochrome..... .....May, July 4th cover
Thantis Lozenges..... .....Jan., Feb. 4th cover

Language Guild.....12, 67

Lea & Febiger
Pharmaceutical Texts..... 216

Lederle Laboratories
Incremin.....126–127
Rhulicream.....192–193
Rhulispray.....192–193
Varidase..... 180

Eli Lilly and Company
Compren.....2, 394
Homicebrin..... 250
Mi-Cebrin.....114, 330
Multicebrin..... 178
Theracebrin..... 450
Vi-Mix Drops.....58, 514

J. B. Lippincott Co.
Literature of Pharmacy..... 106

Mack Publishing Company
Remington's Practice of Pharmacy.....25, 198

Merck & Company, Inc.
Institutional..... 267

Merck Sharp & Dohme
Diuril....26–27, 124–125, 324–325
ST 37.....256, Sept. 3rd cover

National Brands Div., Sterling Drug Co.
Bayer Aspirin.....135, 273, 551

Owens-Illinois
Kimble Vials..... 121
Symbolic Glassware.....342–343

Parke, Davis & Company
Abdol with Minerals....23, 94, 516
Benylin Expectorant..... 120
Caladryl.....265, July 3rd cover
Geriplex..... 185
Ziradryl.....344, 503

Pfizer Laboratories
Cosa-Tetracyn.....170–171

Philadelphia College of Pharmacy and Science..65, 160, 184

Réaubourg & Cie..... 190

A. H. Robins & Company, Inc.
January Check List..... 21
March Check List..... 169
May Check List..... 321
July Check List..... 446
September Check List..... 566

Roche Laboratories
Tashan Cream..... .....20, Mar., May 3rd cover

J. B. Roerig Company, Inc.
Tao.....407, 461
Viterra Tastitabs..... .....101, Apr. 2nd cover

Sabena Belgian World Airlines. 338

Schering Corporation
Chlor-Trimeton.Aug. center spread
Meticorten.....Aug. center spread
Meticortelone...Aug. center spread
"Meti" *Steroids..... Jan., Feb., Mar., Apr., May, June, July, Sept. center spread
Trilafon.....Aug. center spread

Smith Kline & French Laboratories
Acnomel.....Aug. 2nd cover
Benzedrex Inhaler.66, 231, 337, 455
Compazine Multi-Dose..... 99
Compazine Spansule Capsules 187
Temaril..... 191
Thorazine Multi-Dose..... 17
Vi-Sorbin.....Feb. 2nd cover

E. R. Squibb & Sons
Kenacort.....104, 159
Mysteclin V.....137, 199
Spectrocin-T.....71, 241
Vesprin.....388, 508

Travenol Laboratories, Inc.
Incert.....396, 462
Travad..... 165

The University of Manitoba.... 335

The Upjohn Company
Unicap.....11, 157
Zymadrops.....379, 439, 561

V. I. Typewriters, Inc.
IBM and Other Typewriters.. 505

Warner-Chilcott Laboratories
Agoral.....60, 172, 441
Anusol.....60, 172, 441
Biomydrin.....441, 559
Cholarace..... 441
Choledyl..... 441
Gelusil.....60, 172, 441
Mandelamine..... 441
Pacatal..... 441
Peritrate..... Jan. 3rd cover, 60, 172, 201, 271, 347, 441, 465
Proloid.....60, 172, 441
Pyridium...201, 271, 347, 441, 465
Tedral.....60, 172, 441

West-ward, Inc.
All-The Vitamins and Minerals Capsules.....57, 113, 177
1958 Catalog 1, 393, 449, 513
Vitamin Candies.....249, 329

Wilson Rubber Company, Division of Becton, Dickinson & Company
Latex Products..... 229

Winthrop Laboratories, Inc.
Biosynephrine..... 519
Dilcoron..... 311
Isuprel-Franol Tablets.....15, 73
Neocurtasal.....Apr. 3rd cover
pHisoHex.....339, 403, 467
Plaquenil..... 129

spread
spread
,
read
spread
l cover
37, 455
99
s 187
191
17
l cover
04, 159
37, 199
71, 241
38, 508
06, 462
165
335
11, 157
39, 561
505
72, 441
72, 441
41, 559
441
441
72, 441
441
441
1, 271,
72, 441
41, 465
72, 441
3, 177
49, 513
49, 329
229
519
311
15, 73
cover
03, 467
129